



Public Health and Wellbeing Briefing

October 2018

Contents

Introduction	4
<hr/>	
Governance Context	5
Current Health Conditions and Trends	7
<hr/>	
Physical Health Outcomes	7
Mental Health	13
Community Wellbeing	15
<hr/>	
Health Wellbeing	15
Economic Wellbeing	16
Social Determinants of Health	17
<hr/>	
Pollution Burdens and Safety	19
Built Environment	25
Health Care	30
Climate Change and Health	32
<hr/>	
Draft Goals, Potential Strategies and Indicators	36
<hr/>	
Definition of Key Terms	36
Draft Goals and Potential Strategies	37
Potential Indicators	40
Cross-Cutting Themes	42
<hr/>	
Economy and Workforce Development	42
Housing and Homelessness	42
Land Use	43
Water	44
Waste and Resource Management	44
Transportation	44
Energy	45
Landscapes and Ecosystems	45
Climate Change	46



Local, Regional, State, and National Targets	47
Local.....	47
Regional.....	49
State.....	50
National.....	51
Endnotes.....	53



Introduction

The L.A. County Chief Sustainability Office, in partnership with BuroHappold Engineering, UCLA, Liberty Hill Foundation, Gladstein, Neandross & Associates, and Raimi + Associates, is hosting a series of workshops to inform Our County, the countywide sustainability plan. Our County is an effort to outline a bold, inclusive vision for the future that balances the co-equal values of environment, equity, and economy.

At these workshops, we will be discussing public health and wellbeing issues and opportunities for the region, and will take a deep dive into where and how these topics intersect with equity, air quality, labor, housing, and other issues. This briefing document is not a plan – it provides background information to inform those workshops and presents draft goals and strategies as a starting point for discussion.

Place, income, living conditions, and education are all significant contributing factors to the health of a community. Our health and wellbeing are shaped by genetics, behaviors, and access to quality health care, but our physical and socio-economic environments also have a profound impact on health outcomes. The wellbeing of a population incorporates physical, emotional, and social health, reflecting individual physical health and a community's sense of opportunity and happiness.

In Los Angeles County, wide health disparities exist in the burden of disease across different socioeconomic groups. A long history of discriminatory policies, from redlining to occupational exclusions to racially-restrictive covenants, has disproportionately impacted racial and ethnic groups across the region. How we plan and prioritize for a sustainable future can determine the health of residents in the long term.

Our future health and wellbeing will also be shaped by climate change. The impacts of more frequent high-heat days, rising sea levels, intensifying coastal flooding, increased vector-borne diseases, and increasing wildfire risk will pose threats to communities across the County (and the globe). Vulnerable communities, including the elderly, people with disabilities, children, people of color, and people with chronic medical conditions will face increased stresses from climate change, falling disproportionately on those who are historically overburdened and under resourced. The County can realize co-benefits from climate mitigation strategies, such as improved health outcomes, increased physical activity, lower greenhouse gas emissions, improved access to multimodal transportation options, lower energy costs and better resource efficiency.¹

The built environment can have powerful impacts on health and wellbeing, shaping community access to services and opportunities through decisions about land use patterns, transportation options, housing quality and affordability, retail choices, pollution levels, and recreational opportunities. This briefing addresses the intersection of these topics broadly, including discussions on health outcomes, the social determinants of health, and climate change.



Governance Context

The purpose of this section is to provide a broad overview of the jurisdiction and regulatory framework of the Los Angeles County Department of Public Health (DPH), which acts as the health officer for unincorporated areas of the County, as well as 85 out of 88 cities. The cities of Long Beach, Vernon, and Pasadena have their own health departments.

DPH works to protect the health, prevent disease, and promote the well-being of all persons in Los Angeles County. As part of its work, DPH assesses community health status and issues, develops policies and plans to support health, informs and educates people about health issues, enforces laws and regulations to protect the health of the community, provides health services, evaluates the effectiveness of health services, and researches new ideas and approaches to health issues in the community. Some examples of the DPH programs and activities include:

- Health needs assessments
- Service provision through local clinics, health fairs, and community partners
- Health promotion and disease prevention with local partners
- Grantmaking to local partners
- Climate Change and Sustainability Program
- PLACE (Policies for Livable, Active Communities and Environments) and Healthy Design Workgroup

The County works to improve the lives of residents through various services and plays a key role in shaping positive health outcomes and protecting the wellbeing of residents in the communities it serves.

Oversight of DPH primarily comes from the Los Angeles County Board of Supervisors, California Department of Public Health, and the Centers for Disease Control and Prevention. The County is divided into eight geographic Service Planning Areas (SPA), distinct geographic regions that allow DPH to develop and provide targeted services that meet the local needs of residents (Figure 1). Within its jurisdiction, the DPH has direct control over data collection and analysis, including vital statistics and public health data, clinical services provided at 14 health centers across the County, environmental health inspections in homes and businesses, community health outreach, and dissemination of publications and information updates. DPH has endeavored to address public health through a racial equity lens and is vigorously focused on eliminating health disparities based on race. One of those initiatives includes the establishment of the Center for Health Equity.

The work of other organizations and agencies also supports positive health outcomes and mitigation of chronic disease, including community-based organizations, local planning departments, transportation agencies, health organizations, and state planning agencies.

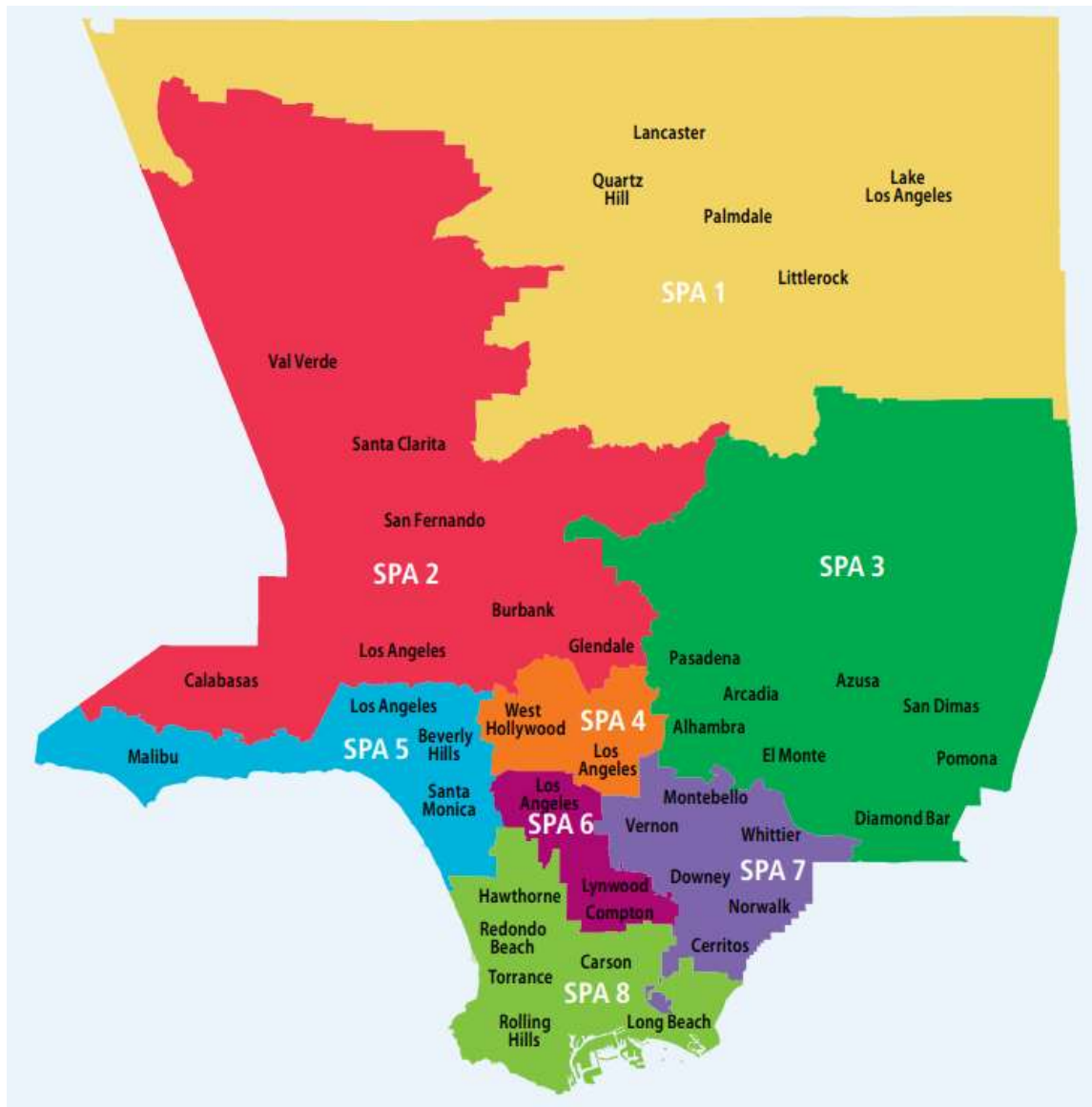


Figure 1: Service Planning Areas in Los Angeles Countyⁱⁱ



Current Health Conditions and Trends

Los Angeles County is a region with vast health disparities. Many cities and neighborhoods within the County are among the healthiest in California. Other communities, however, struggle with the lowest life expectancies and highest levels of environmental burdens in the state. This section examines broad health outcomes, including physical health and mental health.

Physical Health Outcomes

Leading causes of death in a community can highlight a population's risk factors and offer a promising focus for policy intervention. Figure 2 illustrates the life expectancy at birth by city in Los Angeles County and Figure 3 illustrates life expectancy in years by race and ethnicity.

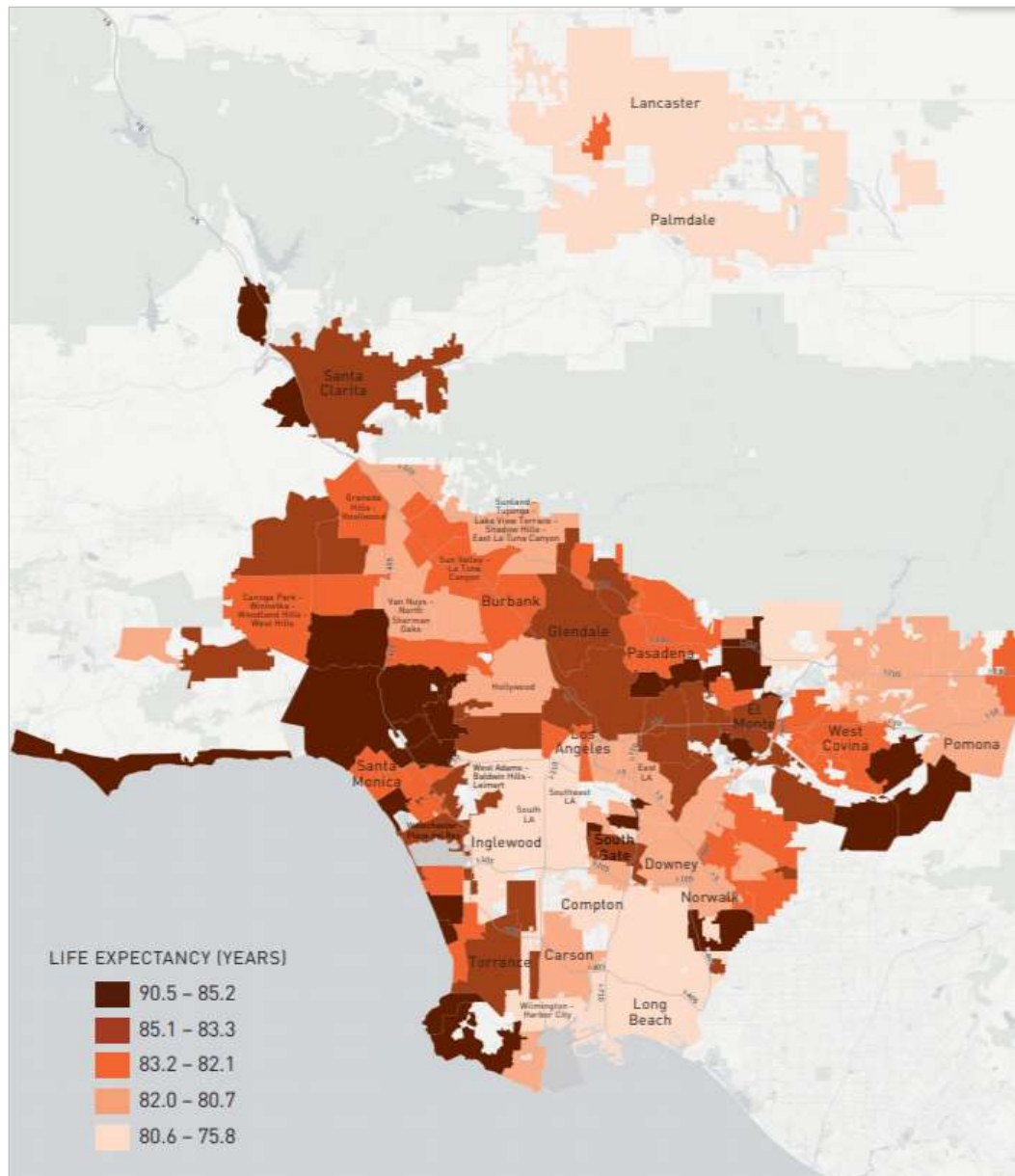


Figure 2: Life Expectancy in LA County by City, Unincorporated Area, & Community Plan Area (City)ⁱⁱⁱ

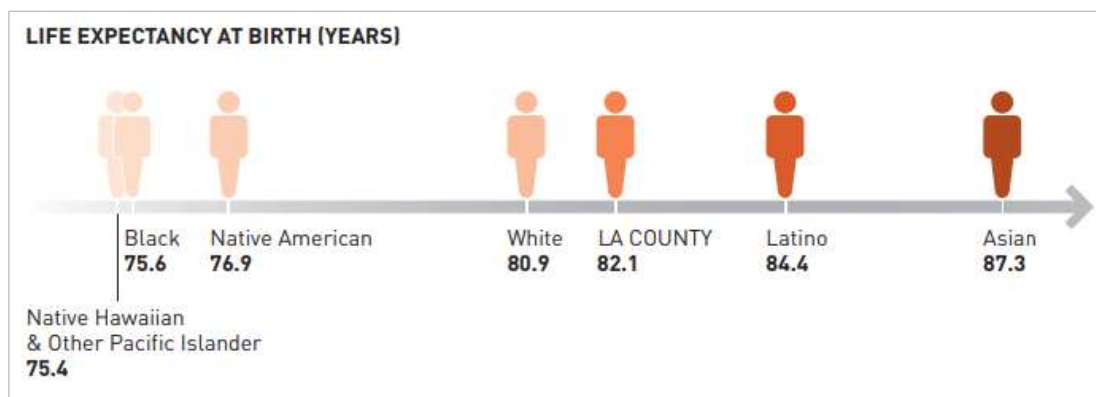


Figure 3: Life Expectancy by Race and Ethnicity^{iv}

Residents in Los Angeles County, the most populous county in the country, can expect to live an average of 82.1 years, but life expectancy across the region reflects a stark reality (Figures 4 and 5). For instance, Walnut Park, southeast of downtown, has the county's longest life expectancy, a remarkable 90.5 years, while Sun Village, in the eastern Antelope Valley, has the shortest at 75.8 years.^v

TOP 5	CITY/UNINCORPORATED AREA	LIFE EXPECTANCY (YEARS)	SERVICE PLANNING AREA
1	Walnut Park	90.5	East (7)
2	Malibu	89.8	West (5)
3	Castaic	88.9	San Fernando Valley (2)
4	Westwood	87.7	West (5)
5	Bel Air-Beverly Crest	87.4	West (5)

Figure 4: Life Expectancy in the Top Five Cities/Unincorporated Areas^{vi}

BOTTOM 5	CITY/UNINCORPORATED AREA	LIFE EXPECTANCY (YEARS)	SERVICE PLANNING AREA
136	Lancaster	76.4	Antelope Valley (1)
137	Westmont	76.3	South Bay (8)
138	Lake Los Angeles	76.2	Antelope Valley (1)
139	East Rancho Dominguez	76.1	South (6)
140	Sun Village	75.8	Antelope Valley (1)

Figure 5: Life Expectancy in the Bottom Five Cities/Unincorporated Areas^{vii}

Premature death refers to deaths that occur before the age of 75 and are often considered preventable. The leading cause of premature death in Los Angeles County is coronary heart disease (Figure 6). Air pollution affects heart health and directly impacts other causes of premature death, including lung cancer, stroke, and breast cancer. In the coming years, we may begin to see increases in the number of premature deaths due to environmental challenges, including extreme heat, food and water-borne illnesses, and natural disasters.

CAUSES OF DEATH	WHITE	LATINO/A	BLACK	ASIAN	ALL RACES / ETHNICITIES
#1 CAUSE	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease
#2 CAUSE	Drug overdose	Motor vehicle crash	Homicide	Suicide	Homicide
#3 CAUSE	Suicide	Homicide	Lung cancer	Lung cancer	Motor vehicle crash
#4 CAUSE	Liver disease/cirrhosis	Liver disease/cirrhosis	Stroke	Stroke	Drug overdose
#5 CAUSE	Lung cancer	Drug overdose	Motor vehicle crash	Breast cancer	Suicide

Figure 6: Leading Causes of Premature Death (before age 75 years)^{viii}

While the number of deaths from coronary heart disease have been decreasing across various racial and ethnic groups in the County, disparities continue to persist (Figure 7). Mortality from coronary heart disease is highest among Black and White residents and has been consistently higher among both of these groups across the State. Additionally, hospitalizations for heart attack, heart failure, and stroke are more frequent among African Americans than any other race/ethnic group.^{ix}

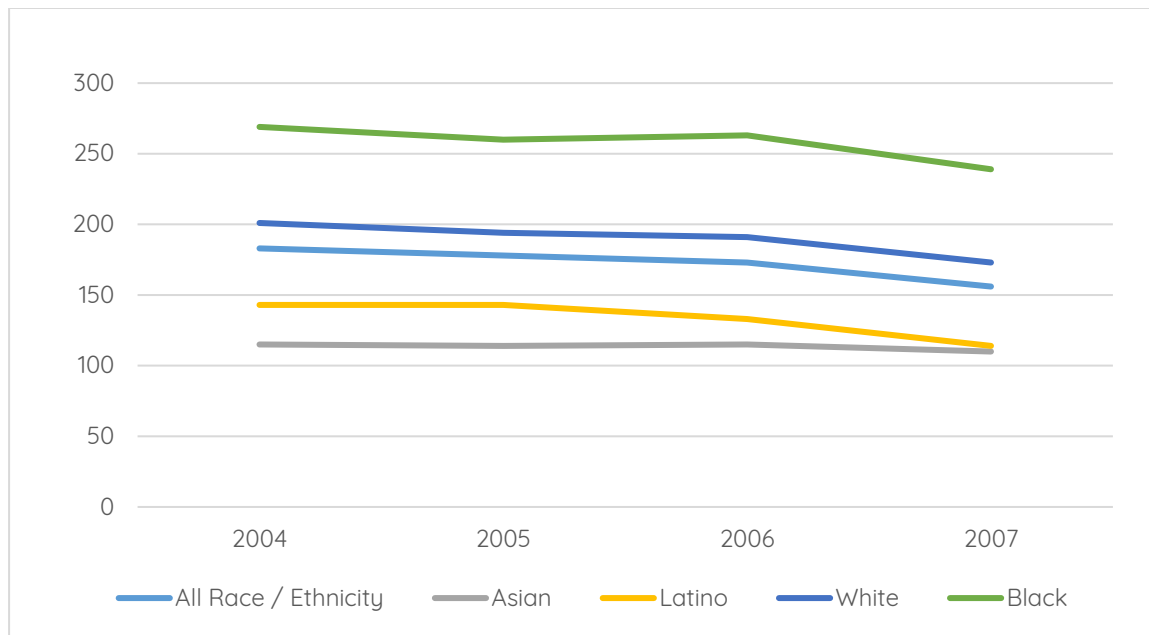


Figure 7: Coronary Heart Disease Mortality Trends by Race/Ethnicity (Age-Adjusted Rate per 100,000)*

Obesity and diabetes, risk factors that impact coronary heart disease. A pattern of high rates of obesity, diabetes, and coronary heart disease is evident across different geographies and race/ethnicities in the County. In 2015, 23.5% percent of adults in the County were obese, increasing from 13.6% in 1997 and 22.2% in 2007.^{xi} There is also a particularly high incidence of obesity, diabetes, and coronary heart disease in communities in the Antelope Valley and South Los Angeles Service Planning Areas (Figure 8). Among County adults, Blacks (32.9%) and Latinos (30.9%) had the highest rates of obesity compared with Asians (9.3%). There is also a strong relationship between obesity, type 2 diabetes, and shared risk factors: age, race, pregnancy, stress, certain medications, family history, and high cholesterol. The large number of adults with multiple risk factors in the County suggests that heart disease and stroke are likely to remain among the top leading causes of death, premature death and disability over the next several decades.

	STATE OVERALL	LA COUNTY OVERALL	ANTELOPE VALLEY	SAN FERNANDO	SAN GABRIEL	METRO	WEST	SOUTH	EAST	SOUTH BAY
% OF ADULTS WHO ARE OBESE	27.9	23.5	29.6	19.8	23.8	22.1	10.3	34.1	28.0	24.1
% OF ADULTS EVER DIAGNOSED WITH DIABETES	10.2	9.8	13.9	8.2	9.1	11.6	4.5	12.3	11.2	10.4
CORONARY HEART DISEASE DEATH RATE (AGE-ADJUSTED PER 100,000 POPULATION)	92.6	116.7	148.4	118.5	106.6	116.5	87.7	147.5	113.2	122.1

Figure 8: Obesity, Diabetes, and Cardiovascular Disease by Service Planning Area^{xii}

Over the long term, health disparities can change, but are intimately linked to our early life experiences, individual behaviors and the social determinants of health. The Antelope Valley and South Los Angeles Service Planning Areas (Figure 9) magnify the extent of health disparities in the County. The percentage of preterm births and babies born with low birth weight are the highest in the County and higher than the State.

	STATE OVERALL	LA COUNTY OVERALL	ANTELOPE VALLEY	SAN FERNANDO	SAN GABRIEL	METRO	WEST	SOUTH	EAST	SOUTH BAY
% OF PRETERM BIRTHS	10.4	9.1	11	9.2	7.5	9.0	7.5	11	9.2	9.2
% OF LOW BIRTH WEIGHT	8.2	7.0	8.5	7.1	6.0	7.1	6.6	8.4	6.5	7.3

Figure 9: Percent of Premature Births and Low Birth Weight by Service Planning Area^{xiii}

A high risk exists of overweight and obese youth becoming overweight adults.^{xiv} In the County, obesity rates among children in grades 5, 7, and 9 are highest in the South Los Angeles Service Planning Area (Figure 10). The prevalence of obesity across all Service Planning Areas and into adulthood highlights the importance of addressing health disparities early in life, as poor diet and lack of physical activity are key risk factors for the leading causes of premature death.

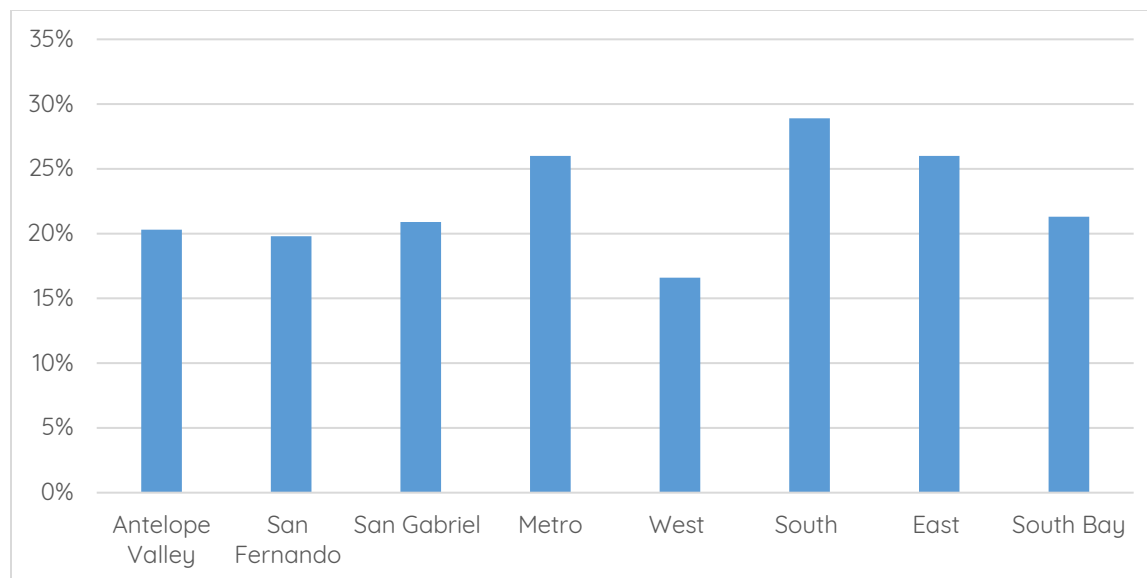


Figure 10: Percent of Children that are Obese in Grades 5, 7, and 9^{xv}

Mental Health

Mental health has a profound impact on an individual's physical and social well-being, impacting quality of life, educational attainment, self-care, and level of activity.^{xvi} Poor mental health can contribute to an increased risk of unhealthy behaviors, health issues, and stress. Understanding that mental health goes beyond a diagnosable psychological disorder is important, as a person's quality of life and perceived sense of wellbeing can also impact a person's health status.

In Los Angeles County, adults in the Antelope Valley and Metro areas report the highest average number of days in the past 30 days that activities were limited due to poor mental health (Figure 11). Of the adult population in the County, 8.6% or an estimated 661,000 persons have been diagnosed with depression. Based on data from the 2015 Los Angeles County Health Survey, rates of depression are above the County and State in the Antelope Valley (12.5%) and West Los Angeles Service Planning Areas. The lowest values were reported by adults in the San Gabriel Valley and South Los Angeles Service Planning Areas.

	STATE OVERALL	LA COUNTY OVERALL	ANTELOPE VALLEY	SAN FERNANDO	SAN GABRIEL	METRO	WEST	SOUTH	EAST	SOUTH BAY
AVERAGE NUMBER OF UNHEALTHY DAYS (DUE TO POOR MENTAL HEALTH) IN THE PAST MONTH	NA	3.4	4.2	3.7	3.1	4.3	2.7	3.3	3.1	3.1
% OF ADULTS WITH CURRENT DEPRESSION	8.6	8.6	12.5	8.0	6.4	10.8	11.1	8.4	8.3	8.6
% OF ADULTS WHO RECEIVE THE SOCIAL AND EMOTIONAL SUPPORT THEY NEED	NA	64.0	71.5	69.1	55.5	60.2	74.8	55.7	60.7	70.6

Figure 11: Mental Health Indicators by Service Planning Area^{xvii}

Pressures on time and finances, together with feelings of isolation, can exacerbate psychological levels of stress across a community. The percentage of adults diagnosed with depression in the County is particularly high among older adults 60 years+ (20.5%) and adults with a disability (23.6%).^{xviii} Environmental issues can also complicate existing health issues. For instance, increased air pollution can lead to increased allergies, asthma attacks, chronic obstructive pulmonary disease, and other cardiovascular and respiratory diseases. Rising temperatures can also cause premature death, cardiovascular stress or failure, and heat-related illness, such as heat stroke, heat exhaustion, and kidney stones. Any of these stressors can lead to mental health disorders, such as depression, anxiety, Post-traumatic Stress Disorder (PTSD), substance abuse, and other conditions.

Community Wellbeing

A sense of community wellbeing is defined by physical health, general state of social, mental, and emotional health, and economic wellbeing. The interaction of these elements' shapes quality of life, including life satisfaction and outlook. ^{xix}

Health Wellbeing

From a public health perspective, physical and mental health are important elements of overall wellbeing. Of the adult population in the County, 79% report being in good or excellent health. Based on data from the 2015 Los Angeles County Health Survey, rates of self-reported good or excellent health are above the County average in the West Los Angeles and San Fernando Service Planning Areas. The lowest values were reported by adults in the Metro, Antelope Valley, and South Los Angeles Service Planning Areas. Similarly, adults in the Antelope Valley, South Los Angeles, and Metro Service Planning Areas report the highest average number of days in the past 30 days that activities were limited due to poor physical and/or mental health (Figure 12).

	STATE OVERALL	LA COUNTY OVERALL	ANTELOPE VALLEY	SAN FERNANDO	SAN GABRIEL	METRO	WEST	SOUTH	EAST	SOUTH BAY
% OF ADULTS (18+ YEARS OLD) WHO REPORTED GOOD / EXCELLENT HEALTH STATUS	NA	79	74	83	77	75	90	69	78	79
AVERAGE NUMBER OF UNHEALTHY DAYS (DUE TO POOR MENTAL OR PHYSICAL HEALTH) IN THE PAST MONTH	NA	5.9	7.4	5.9	5.9	6.8	5.4	6.0	5.3	5.6

Figure 12: Health-Related Wellbeing Indicators by Service Planning Area^{xx}

While well-being is generally measured using self-reports, a broad understanding of the social determinants of health can help us understand the types of factors that impact perceived quality of life.



Economic Wellbeing

Economic wellbeing includes the ability of families and individuals to meet their basic needs, such as food, housing, and health care, while building long-term financial security and wealth. Higher incomes are associated with longer life expectancies, a pattern that is evident regardless of where a person lives.^{xxi} Health outcomes vary based on income and wealth, impacting our access to care, safe homes, high quality food, and even our levels of physical activity.^{xxii}

Income disparities in Los Angeles County are embedded within the diverse economic landscape. The County is a hub of innovative industries, a unique confluence of aerospace and entertainment alongside manufacturing, hospitality, and arts and gaming. The County's diverse economic landscape also exhibits deep social and economic disparities. Based on data from the Public Policy Institute of California, 24.3% of Los Angeles residents live in poverty (2014-2016 average).^{xxiii} Wide income disparities exist, ranging from median earnings of \$19,060 in poorer areas of the County to upwards of \$52,687 along the affluent Pacific Coast.^{xxiv}

A Portrait of Los Angeles County 2017-2018 report that median earnings across the County in 2015 were \$30,654. In order to better understand disparities in the County, the report divides the region into "Five LA Counties:" Glittering LA, Elite Enclave LA, Main Street LA, Struggling LA, and Precarious LA. This briefing will only highlight income disparities across two of the most disparate counties: Glittering LA and Precarious LA. In the County, higher median earnings of \$52,687 are concentrated in "Glittering LA," including seven cities along the Pacific coast, La Canada Flintridge, San Marino, Bel-Air-Beverly Crest, and Brentwood-Pacific Palisades, while lower median earnings of \$19,060 are concentrated in "Precarious LA," including Cudahy, Westmont, Lennox, East Rancho Dominguez, Florence-Graham, and Southeast Los Angeles.

While poverty is almost non-existent in Glittering LA (<5%), the poverty rate in Precarious LA is 35.4%, more than double the countywide rate. Housing only further magnifies these geographic disparities. In Los Angeles County, 4.8% of adults have reported housing instability (i.e., reported being homeless or not having their own place to live or sleep) in the past 5 years, while in the Antelope Valley (11.3%) and South Los Angeles (9.9%) Service Planning Areas, that number more than doubles.

Social Determinants of Health

The health and wellbeing of Los Angeles County residents is influenced by a wide variety of complex and interrelated factors. Our behaviors, including what we eat, whether we are physically active or smoke, and how often we see a doctor affects our health. Our health is also influenced by a myriad of other factors. Economic stability, environmental pollution and safety, and the surrounding built environment are all factors that shape our health, as do the individual choices we make about healthy living and wellbeing. Figure 13 illustrates types of social determinants of health.

Based on the *County Health Rankings and Roadmaps*, Los Angeles County ranks 23 (of 57 total counties) in health outcomes, based on how long people live and how healthy people while alive.^{xxv} The rankings also include a measure based on health factors, including a ranking for physical environment, in which the County ranks last. These rankings help provide context for the factors shaping health outcomes in the County.

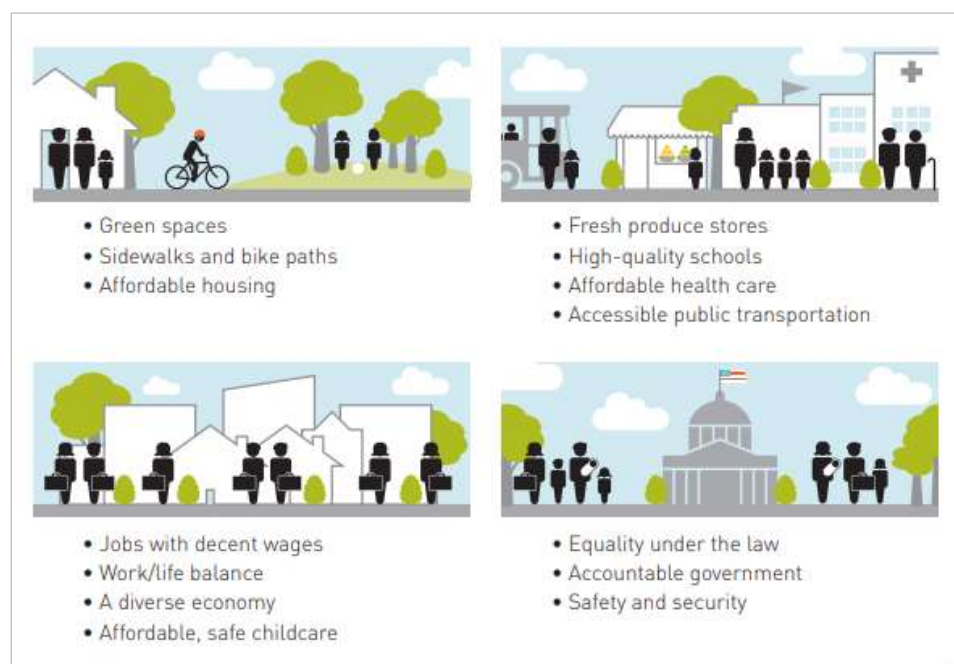


Figure 13: Social Determinants of Health^{xxvi}

The cumulative burden of social, economic, and environmental conditions may lead to unequal, inequitable, or disparate outcomes for a region, city, and neighborhood. Figure 14 illustrates a combined measure of healthy places in Los Angeles County, combining economic, education, transportation, neighborhood, pollution, and health care indicators. The figure shows a concentration of less healthy places in the City of Los Angeles, North and Southeast areas of the County, with areas scattered across the San Gabriel Valley and San Fernando Valley.

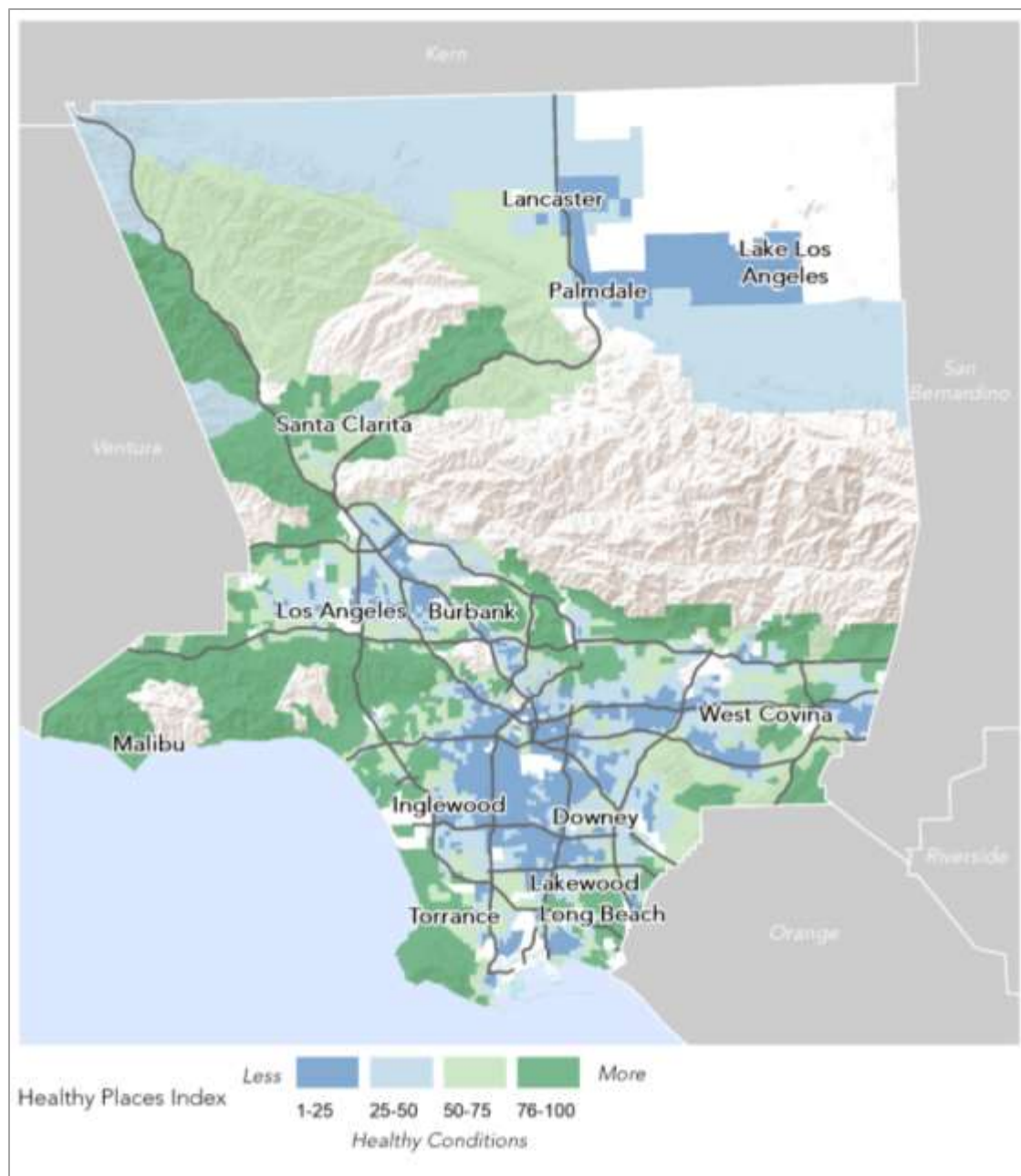


Figure 14: Healthy Places Index Map^{xxvii}

Pollution Burdens and Safety

Environmental pollution is costly and inequality distributed across the County. Air pollution, proximity to industrial pollutants, and water and soil pollution are examples of the types of hazards that impact health. Healthy communities are safe, clean, and attractive for all members of a community. They include active neighborhoods, parks, and streets supported by good environmental design.

The burden of environmental pollution varies across Los Angeles County. Children, seniors, people with pre-existing medical conditions are more vulnerable to the effects of pollution and more sensitive to the impacts. CalEnviroScreen (CES) is a statewide screening methodology used to help identify California communities that are disproportionately burdened by multiple sources of pollution and are sensitive to the effects of pollution. Figure 15 shows the CES scores within Los Angeles County.

Based on 2018 CES data, there are 4,372,397 residents of Los Angeles County that live in a disadvantaged community.^{xxviii}

There is no one single factor burdening the region. Rather, several environmental, health, and socioeconomic indicators—including ozone, hazardous waste, cardiovascular disease rate, unemployment and housing burden—make these communities a priority for future planning, as identified by State Senate Bills 535, 1000, and 379. The three census tracts with the highest CalEnviroScreen percentile in Los Angeles County are located in zip code 90023, which includes areas of Boyle Heights, Wyvernwood, and Soto Street Junction.

As noted in Figure 6, the leading cause of premature death in Los Angeles County is coronary heart disease. Air pollution affects heart health and directly impacts other causes of premature death, including lung cancer, stroke, and breast cancer.

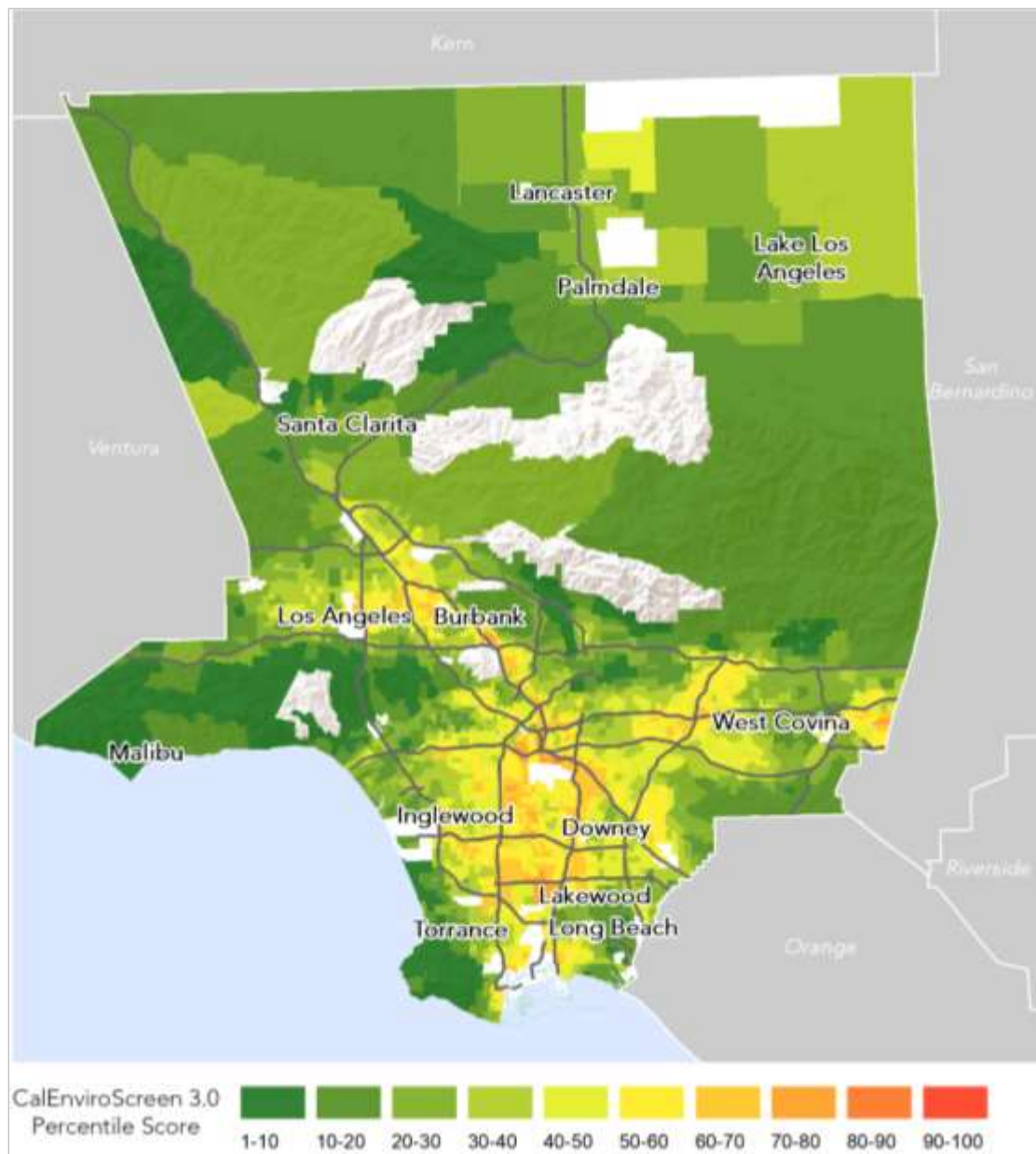


Figure 15: CalEnviroScreen Map for Los Angeles County^{xxx}

Air Quality

There are a number of substances that comprise air pollution including solid particles, liquid droplets, and gases, and these pollutants originate from a variety of sources, large and small. Air pollution sources can be stationary, such as power plants and manufacturing facilities, or they can be mobile sources, such as motor vehicles. In addition to primary pollutants which are directly emitted from a source, secondary pollutants can form when primary pollutants react in the atmosphere. Ground-level ozone is a harmful secondary pollutant that is created when volatile organic compounds and nitrogen oxides interact in the presence of heat and sunlight.

Compared to most urbanized regions in the United States, L.A. County has a high proportion of toxic emissions from the energy sector, with oil refineries ranking in the top three of toxic emissions from stationary sources in L.A. County.^{xxx} Additionally, while there have been major improvements in reducing air pollutants from light-duty motor vehicles in recent years, heavy-duty vehicles such as trucks, trains, ships and aircraft have not seen the same kinds of improvements. The table below identifies the most common toxic pollutants from various stationary and mobile source categories.¹

Table 1: Common Criteria and Toxic Pollutants from Stationary & Mobile Sources

Source	Pollutant
Refineries	Volatile Organic Compounds (VOCs), Lead, Sulfur Dioxide (SO ₂), Carbon Monoxide (CO)
Power generation	Nitrogen Dioxide (NO ₂), Particulate Matter (PM), CO
Manufacturing	Various carcinogens and hazardous air pollutants
Leakage from natural gas storage facilities	Methane, Ethane
Landfill gases	Methane, CO ₂ , CO (from flaring)
Metals processing and plating	Lead
Paints, coatings, and cleaning materials	VOCs
Lawn and garden equipment	CO, NO ₂ , VOCs
Dry cleaning	VOCs
Wood stove and fireplaces (and No-Burn Alerts)	PM, CO
In-home natural gas appliances	NO ₂ , CO

¹ This list is focused on criteria and toxic air pollutants and does not include carbon dioxide and greenhouse gases.

Light vehicles	CO, NO ₂ , VOCs, PM
Heavy vehicles and school buses	CO, NO ₂ , VOCs, PM

There are several particularly harmful pollutants which are classified as being in non-attainment (PM₁₀) or extreme non-attainment (ozone) with the National Ambient Air Quality Standards and serious non-attainment (PM_{2.5}) with California Air Quality Standards. Ambient air quality also varies geographically; for example, Lancaster, Santa Clarita Valley, Pomona/Walnut Valley, and East San Gabriel Valley generally have the most days in exceedance of ozone standards² throughout the basin.^{xxxvi}

Exposure to ozone on a short-term scale can result in human health effects such as shortness of breath, coughing, inflamed airways, increased frequency of asthma attacks, lungs more susceptible to infection, and can cause chronic obstructive pulmonary disease (COPD), and other effects. Long-term exposure to ozone may be linked to permanent lung damage, such as abnormal lung development in children.^{xxxvii} Figure 16 displays the trend in ozone levels within the South Coast Air Basin between the years 2000 and 2016.

The harmful impacts of particulate matters vary with the size of the particle. Exposure to coarser particles, such as PM₁₀, primarily results in eye, nose, and throat irritation. Finer particles, such as PM_{2.5}, pose the greatest health risk. These fine particles get deep into lungs and some may even enter the bloodstream. Exposure to these can affect a person's lungs and heart, causing cardiovascular illnesses such as cardiac arrhythmias and heart attacks, and respiratory effects such as asthma attacks and bronchitis.^{xxxviii} Figure 17 displays the trend in ozone levels within the South Coast Air Basin between the years 2000 and 2016.

Additionally, localized air pollution remains a serious health threat, and one that disproportionately affects communities that are historically over-burdened and under-resourced. A number of studies have shown that regional geography, wind patterns, and congested vehicular roadways affect dispersion of pollution. Within 1,000 feet of freeways in Los Angeles County, pollution from traffic is at its highest, as are rates of asthma, cancer, heart attacks, strokes, reduced lung function, pre-term births, and a growing list of other health problems.^{xxxix}

² As measured by days exceeding federal (>0.075 ppm) and state (>0.070 ppm) 8-hour standards

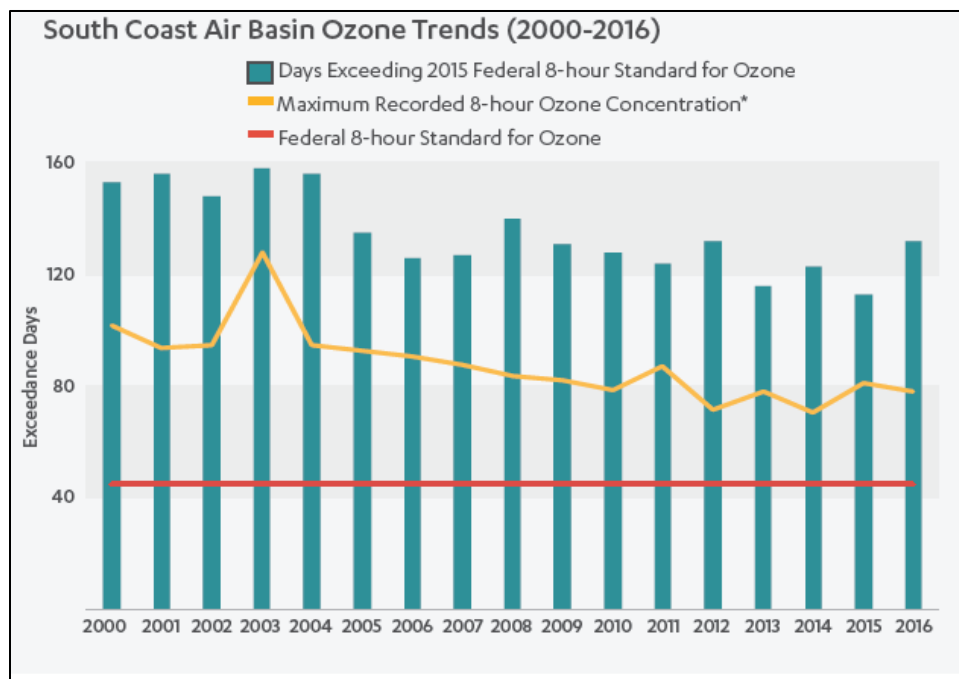


Figure 16: South Coast Air Basin Ozone Trends (2000-2016)^{xxxv}

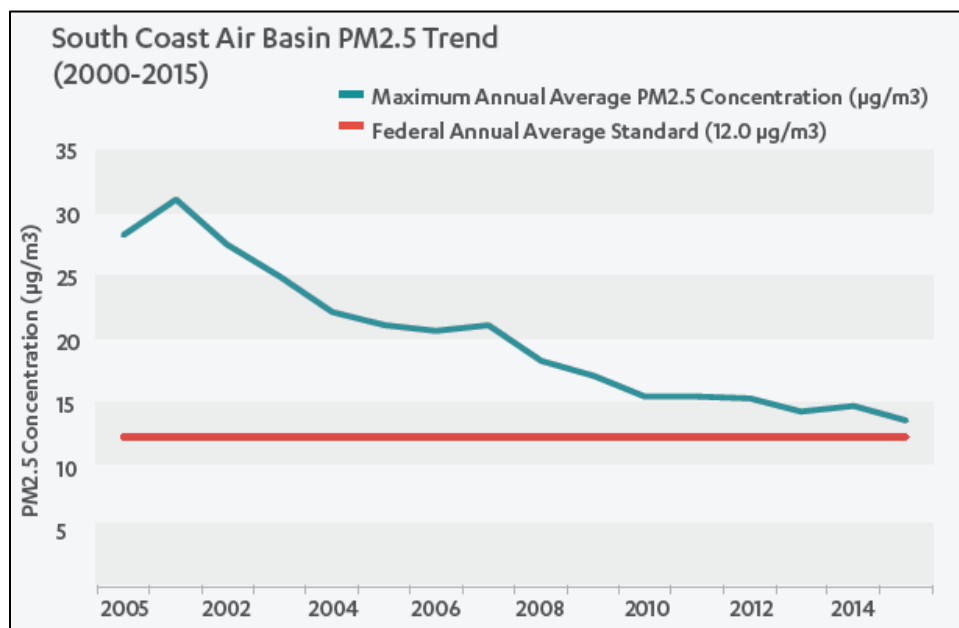


Figure 17: South Coast Air Basin PM_{2.5} Trend^{xxxvi}



Toxic air emissions are an effective indicator for air quality, as these types of emissions provide information on the sources, mass emissions, and spatial distributions of a variety of toxic chemical constituents in L.A. County. Air toxics risk analyses consider pollutants such as diesel particulate matter, benzene, 1,3 butadiene, and carbonyls. The SCAQMD has undertaken Multiple Air Toxics Exposure Studies (MATES) in 1998 (II), 2005 (III), and 2012 (IV). MATES V study is currently in progress (2017-2020). These studies are designed to evaluate progress in reducing regional air toxics exposure, focus efforts for toxic risk reduction, prioritize environmental justice projects for funding, address public inquiries regarding air toxics impacts, and help interpret monitoring data from other special toxics investigations.

Additional special toxics investigations have been performed, including the Paramount Chromium investigations to identify the source of high chromium levels in local neighborhoods, the Sunshine Canyon Landfill investigation to mitigate odors emitted from the landfill gases, the Rancho Cucamonga and Aliso Canyon gas leak investigations to ensure proper clean-up and reduced methane levels in nearby areas, and the Air Toxics Initiative to expand more generally the remediation of air contaminants within a four county region.

Crime and Neighborhood Safety

Crime and neighborhood safety can have health, social, and behavior implications for victims and their families. Violent crime, such as homicides, directly affect the health outcomes of communities. In many communities across the County, homicides are one of the leading causes of premature death and directly impact years of life lost, as shown in Figure 6. Direct exposure to physical violence is also associated with a range of negative health consequences, such as depression, anxiety, suicide, and post-traumatic stress disorder.

Along with direct exposure to crime, indirect exposure to crime can have a broad impact on the rest of the community. An individual's perception of neighborhood safety can be a disincentive to engage in physical activity outdoors. Parents who are afraid of neighborhood crime may keep their children indoors and people, especially women, who fear sexual harassment or assault may avoid outdoor activities, which may limit opportunities to be physically active and develop support networks.

Most adults (84%) across Los Angeles County perceive their neighborhood to be safe from crime (Figure 16). A closer look at adult perceptions of neighborhood safety in each Service Planning Area reveals variation across the region. Adults in the Metro (74.3%), and especially in the South (40.3%) Service Planning Areas, have a lower perception of safety than most adults in the County. Focusing on a broader understanding of crime prevention can help address broader community issues, such as gentrification, displacement, and sustainability, that impact community health and wellbeing.

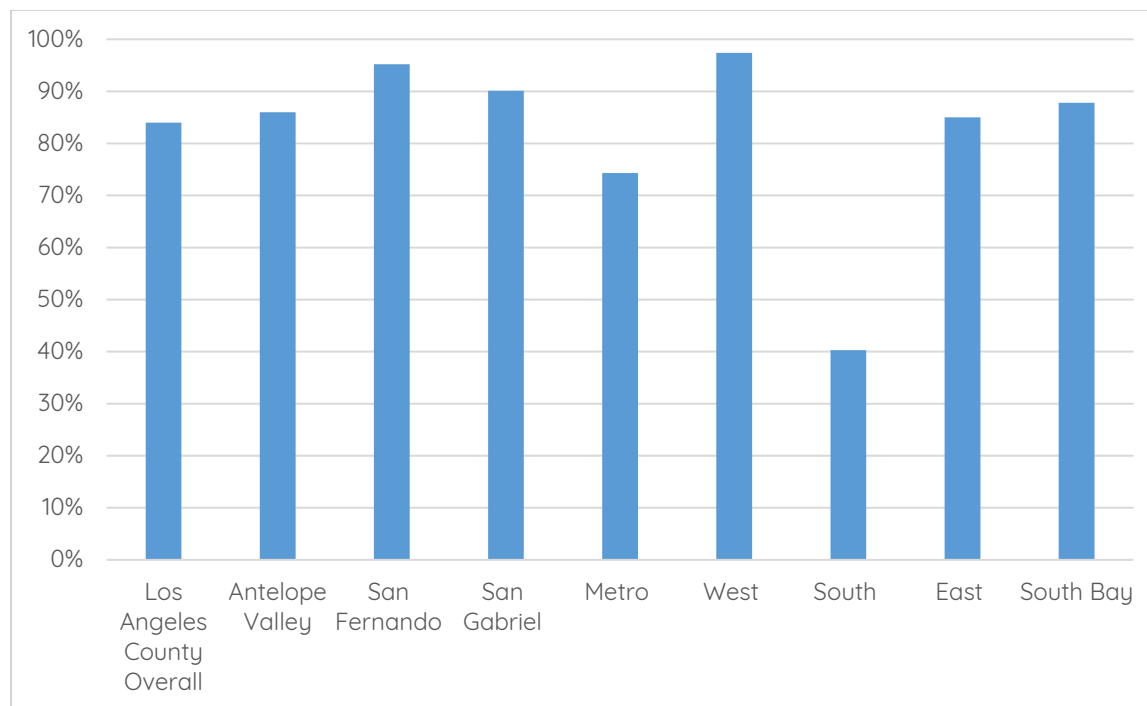


Figure 18: Adult Perception of Neighborhood Safety^{xxxvii}

Built Environment

The built environment plays an important role in the health and wellbeing of residents. Land use decisions and neighborhood design can have significant health impacts. Community characteristics can impact a resident's level of physical activity, access to nutritious foods, public safety, and exposure to pollutants. This section examines the types of environmental determinants that impact a person's quality of life. Elevating health equity priorities in making land use decisions can help support a healthy, vibrant, and resilient community.

Access to Parks

Park access and quality can have significant impacts on residents' health and wellbeing. The close proximity of parks and recreational services can encourage the use of facilities and programming, physical activity, and mental health benefits. Access to parks in Los Angeles County is generally low and varies widely across the region (Figure 17). The map does not show park quality, but from a social equity perspective, park amenities (e.g., facilities, infrastructure, safety, accessibility, etc.) also impact users' experience of parks.

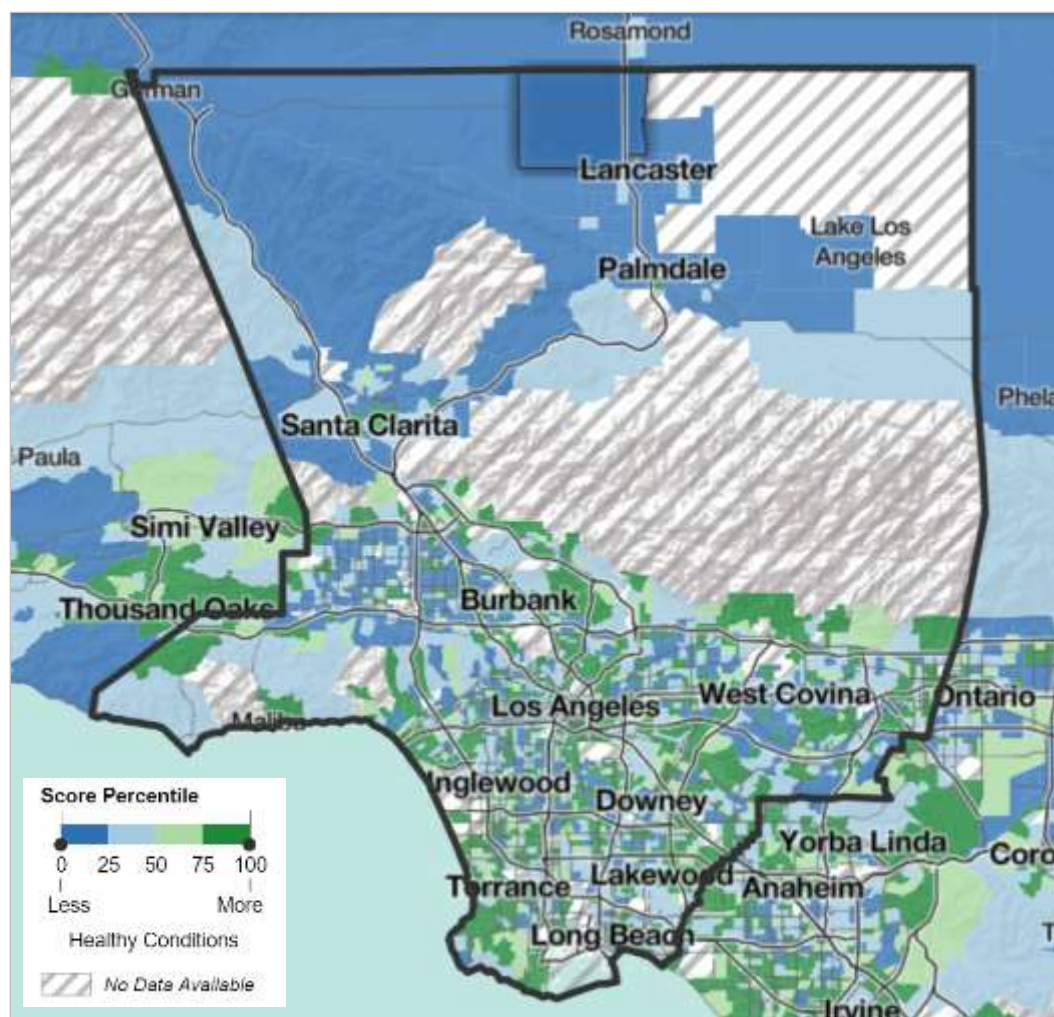


Figure 19: Population Living in Los Angeles County Within a Half Mile of a Park^{xxxviii}

Based on a 2016 study by the Los Angeles County Department of Public Health, park space per capita is highest in San Dimas (56 acres/1,000 population) and Malibu (55 acres/1,000 population). There are 17 communities with less than 0.5 acres per 1,000 population.^{xxxix} Income and racial disparities exist in how communities access public parks across Los Angeles County. Of particular note, African Americans (56%) and Latinos (50%) are more likely to reside in communities with less park space per capita compared to Whites (27%) and Asians (36%).^{xl}

These disparities signal an opportunity to direct resources and investments to increasing park space and reducing disparities in health. Increasing park access is expected to be especially challenging in small cities that have very few undeveloped parcels, requiring creative thinking about design and use of limited community spaces. Considerations of inclusive park access should also ensure proximity to homes and access to safe, engaging, and user-friendly facilities with features to accommodate users of all abilities.

Food Insecurity and Access

Food access and security varies significantly across the County. Food insecurity, defined as the inability of people to access food for a healthy lifestyle,^{xli} steadily increased from 21.8% in 2002 to 30.6% in 2011, and then leveled off from 2011 to 2015 (29.2%).^{xlii} The Antelope Valley Service Planning Area has the highest level of households with low food security and households with very low food security (Figure 18).³ The combination of poverty, low food security, and poor nutrition has serious consequences on the health and wellbeing of all residents. A lack of quality, nutritious food is closely linked to the incidence of chronic disease and behavioral health issues.

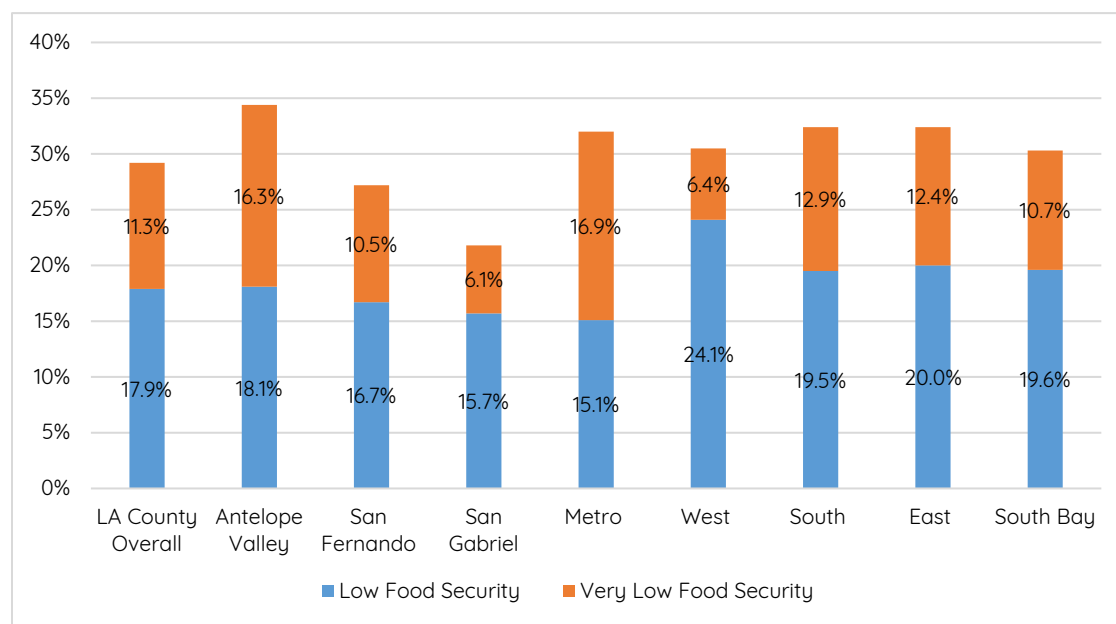


Figure 20: Households <300% Federal Poverty Level by Food Security Status and Service Planning Area^{xliii}

³ “Low food security” is defined as households reporting reduced quality, variety, or desirability of diet but little to no indication of reduced food intake. “Very low food security” is defined as households reporting disruptions in eating patterns and reduced food intake.



Access to food may also be limited by conditions in the built environment, including store availability (e.g., convenience store, neighborhood market, large grocery store), proximity to a supermarket affordability, and perceived access to fresh fruit and vegetables. Residents of communities with access to a full service grocery store or supermarket tend to eat more fruits and vegetables, have lower body weights, and lower rates of chronic diseases.^{xliv} A strong link exists between the neighborhood retail food environment and the prevalence of obesity and diabetes, which is of particular concern for low-income communities.^{xlv} In addition, areas with more fast food restaurants and convenience stores than grocery stores experience higher rates of obesity and chronic disease across all income groups.

Developed by the CDC, the modified Retail Food Environment Index (mRFEI) identifies the proportion of healthy and less healthy food retailers within a given geographic area. Scores range from 0-100. Areas with a low mRFEI score typically lack access to healthy food retailers, including supermarkets, larger grocery stores, and small produce stores, and may have a higher number of fast food restaurants and convenience stores. An index score greater than 30 is considered high access to healthy food, while a score of zero identifies no access to a healthy food retailer.

Geography and population density pose limitations to the use of the mRFEI tool, as some areas that appear as having no healthy food outlet may have very small populations or large areas of open space. Within Los Angeles County, there are wide swaths of the region, primarily in the San Gabriel Valley and Antelope Valley, that appear to have no healthy food retailers (Figure 19). There is also a pattern across the County of communities with high access to healthy food in close proximity to communities with low or poor access. These neighborhood disparities in access to healthy food are a major health issue, particularly in disadvantaged communities, where poor nutrition and unhealthy diets are risk factors for various chronic diseases.

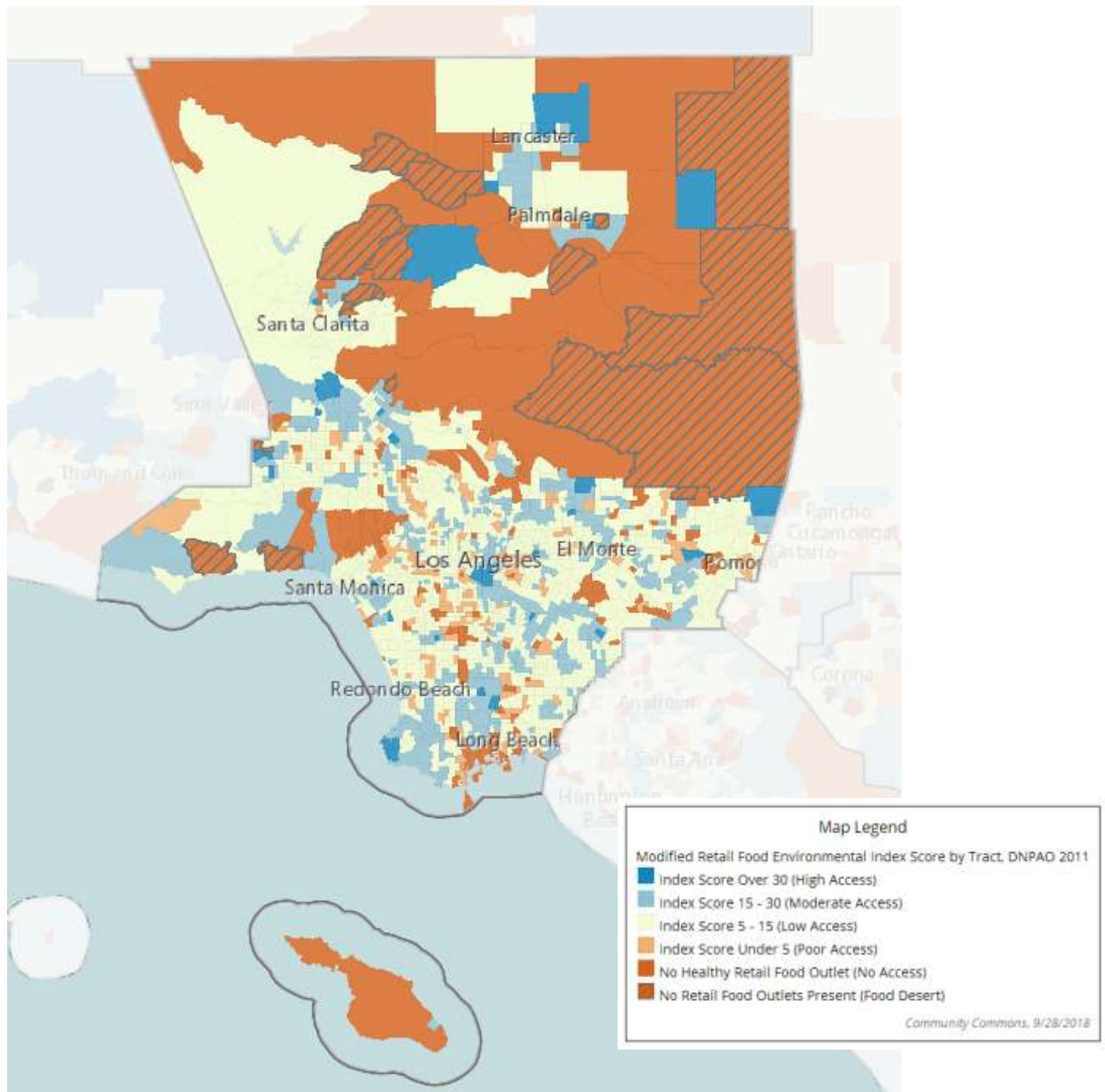


Figure 21: Food Environment Index (mRFEI)^{xvi}

Health Care

Having health care insurance is one important factor in accessing health care. The Affordable Care Act (ACA) was passed in 2010, requiring all insurers to offer coverage to individuals regardless of health status. The law requires that almost everyone have health insurance, or otherwise, pay a tax penalty. California created its own state-based insurance marketplace, called Covered California, and expanded Medi-Cal to low-income single adults with incomes below 138% of the federal poverty level.^{xlvii}

The uninsured rate has steadily decreased under the ACA, peaking in 2011 at 28.5% and sharply declining to 11.7% in 2015 (Figure 20).^{xlviii} The decline in the number of uninsured was accompanied by an increase in adults insured by public insurance. If repealed, the County of Los Angeles would see 1,160,501 of low-income adults enrolled in Medi-Cal lose their health insurance, in addition to 322,700 low- and middle-income residents losing their federal subsidies.^{xlix} As the provider of last resort, this would create a tremendous strain on the County hospital system.

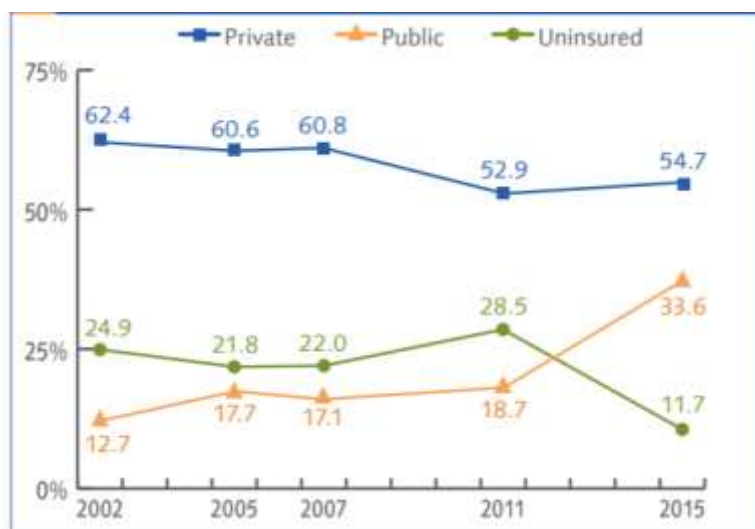


Figure 22: Adult (18-64) Insurance Typesⁱ

The availability of services, quality of health care, and potential costs are also important factors in promoting and maintaining access to care. These barriers to health can lead to delays in receiving care, financial burdens, and preventable hospitalizations. In Los Angeles County, the highest percentage of adults reporting difficulty accessing care are concentrated in the South Los Angeles Service Planning Area (Figure 21). This Service Planning Area is also burdened by the highest percentage of both uninsured adults and adults who did not see a dentist or go to a dental clinic in the past year in the entire County.ⁱⁱ

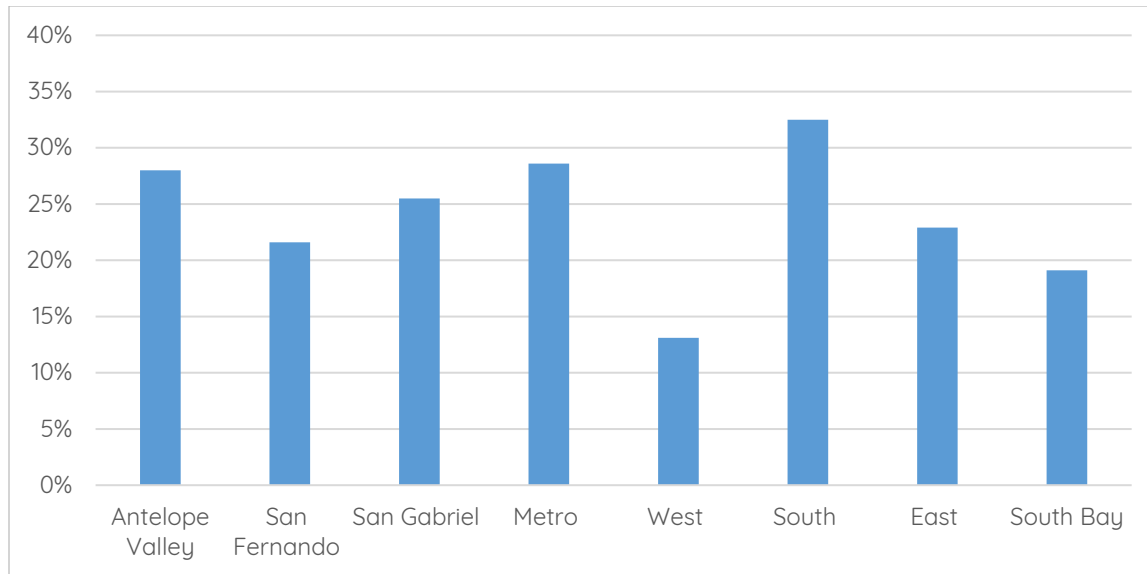


Figure 23: Percent of Adults Reporting Difficulty Accessing Care by Service Planning Areaⁱⁱⁱ

Climate Change and Health

Climate change is a critical environmental challenge and poses significant threats to the health and wellbeing of communities across our County. Everyone will not experience the impacts of climate change in the same way. The impacts of climate change will fall hardest on those who are historically over-burdened and under-resourced. In these neighborhoods and communities, factors ranging from disproportionately poor environmental quality, lack of health care access, and linguistic isolation, will contribute to greater climate risk.^{liii} The burden is compounded by having fewer resources to prepare for or recover from the impacts of climate change. In responding to the risks of climate change, the County has an opportunity to address climate vulnerabilities, while building more equitable communities in adapting to changes in the built environment, natural ecosystems, and economies.

In Los Angeles County, extreme heat, poor air quality, sea level rise, regional drought, vector-borne disease, among other climate hazards are anticipated to negatively affect human health, health behaviors, and the socioeconomic factors that influence health outcomes. Figure 22 illustrates the relationships between climate drivers and health.

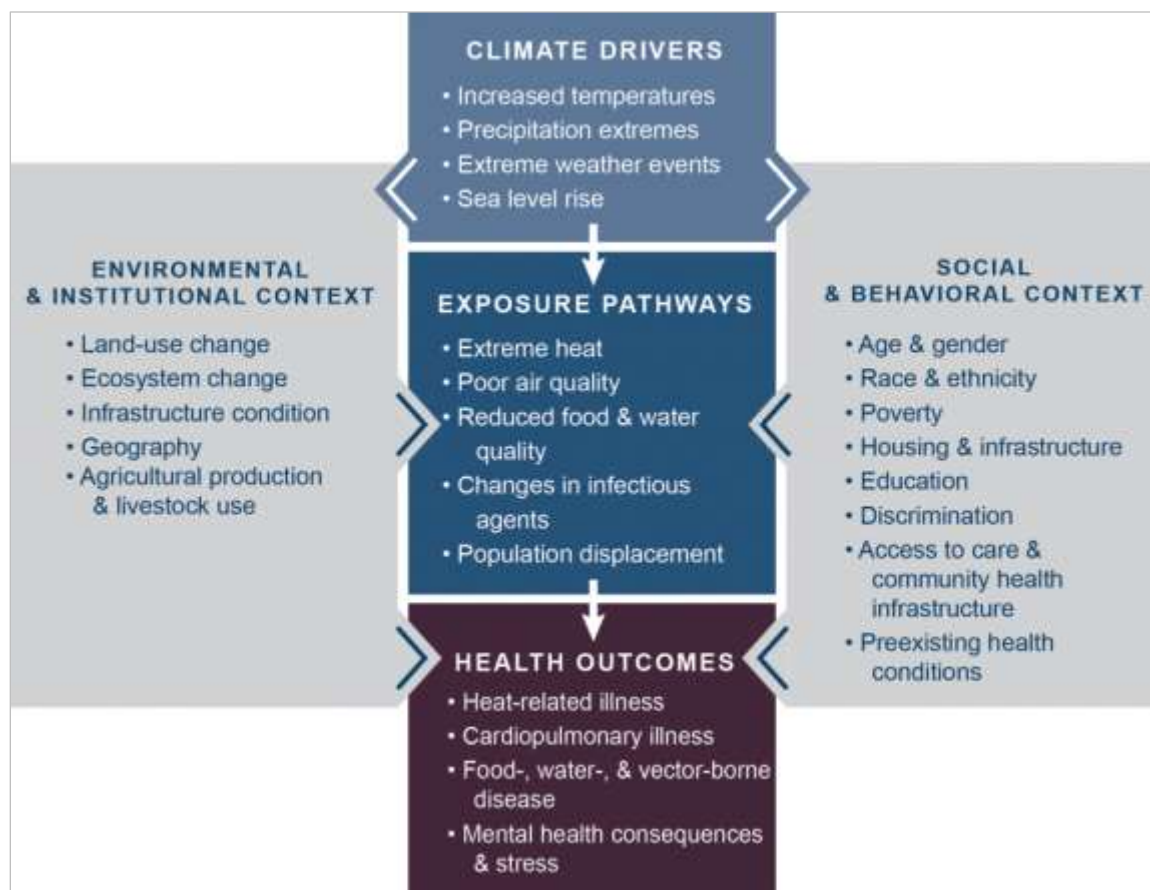


Figure 24: Climate Change and Health^{liv}

For example, extreme heat and multi-day heat waves can directly impact human health, deaths, and illnesses, while also impacting communities indirectly through energy disruption, spikes in energy prices, and subsequent inability of lower-income populations to afford basic services. As show in Figure 23, the number of extreme heat days is expected to increase in many inland areas of the County. Certain populations, such as older adults, young children and infants, pregnant women, and people with chronic illnesses, are more susceptible to warmer temperatures and heat-related illnesses.

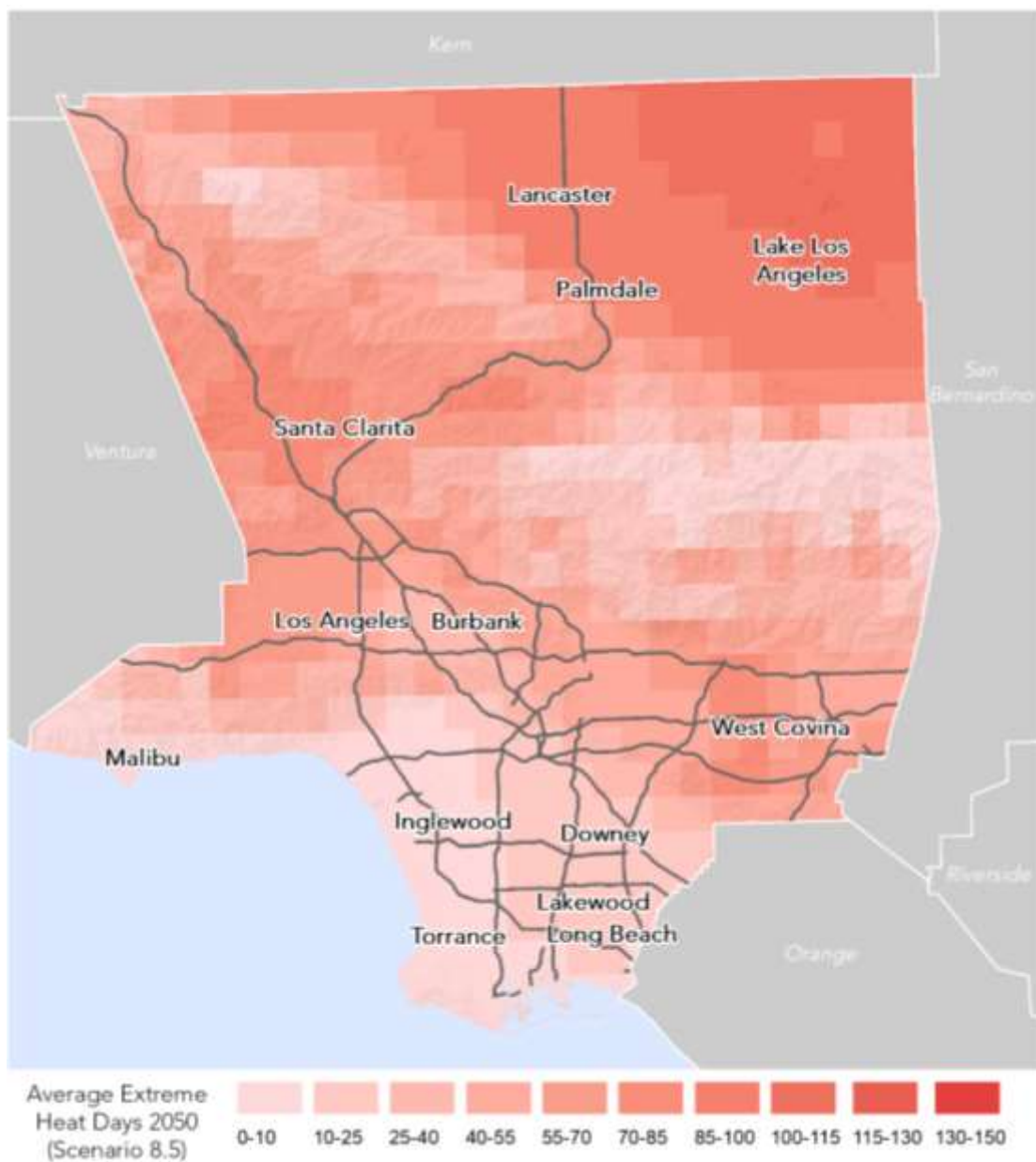


Figure 25: Extreme Heat Days in Los Angeles County by 2050^{iv}

Lower-income communities and communities of color are also more susceptible to the effects of extreme heat due to existing social inequities. Lower-income areas and communities of color are more likely to live in urban areas lacking sufficient park space or tree canopy coverage, and are therefore, more prone to suffer from urban heat island effect, which increases the magnitude of extreme heat events. Outdoor workers, individuals who have limited transportation options, or families who live in lower-quality housing are also at greater risk to extreme heat. Figure 24 shows example risk factors and contributing causes to extreme heat risk.

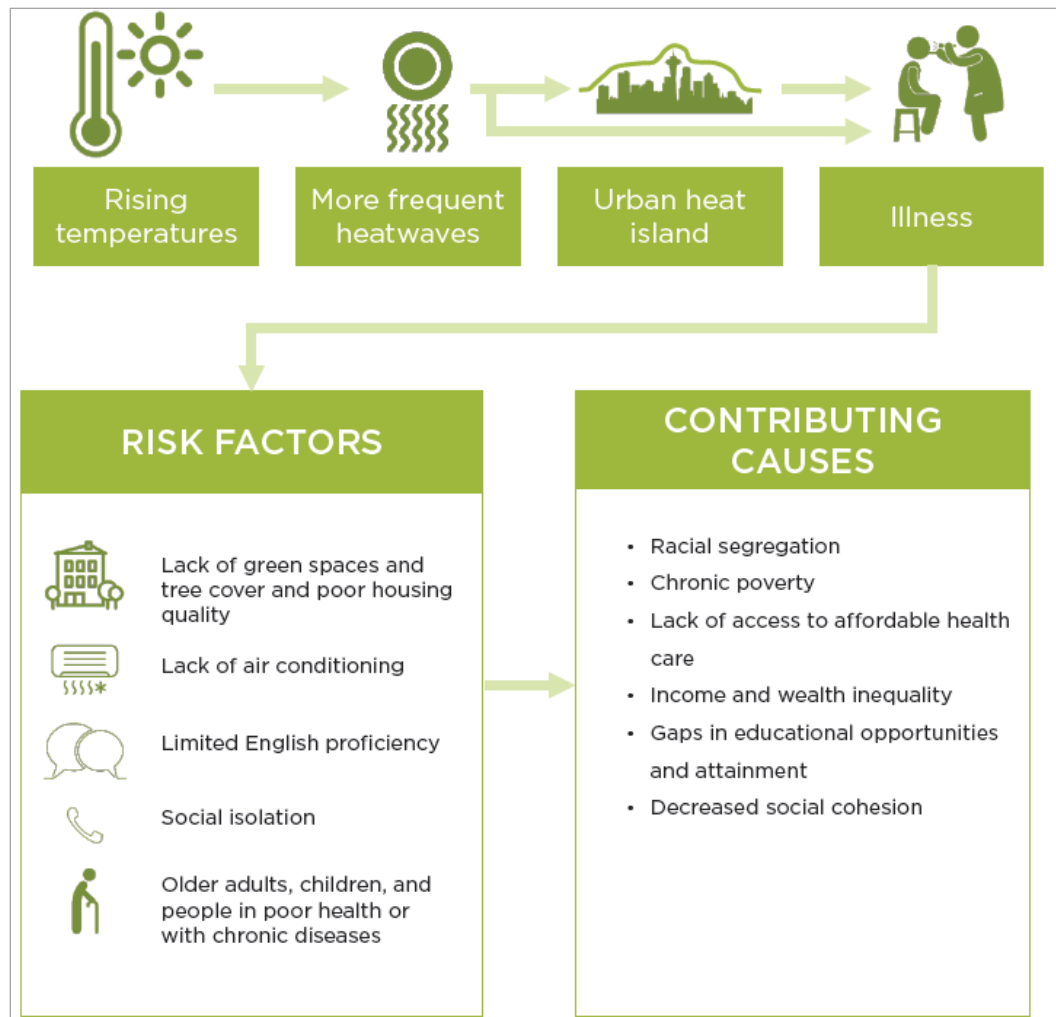


Figure 26: Extreme Heat and Health^{vi}

Across Los Angeles County, most adults share concerns over the possibility of increased climate change impacts, including heat waves, wildfires, and droughts and water shortages (Figure 22).

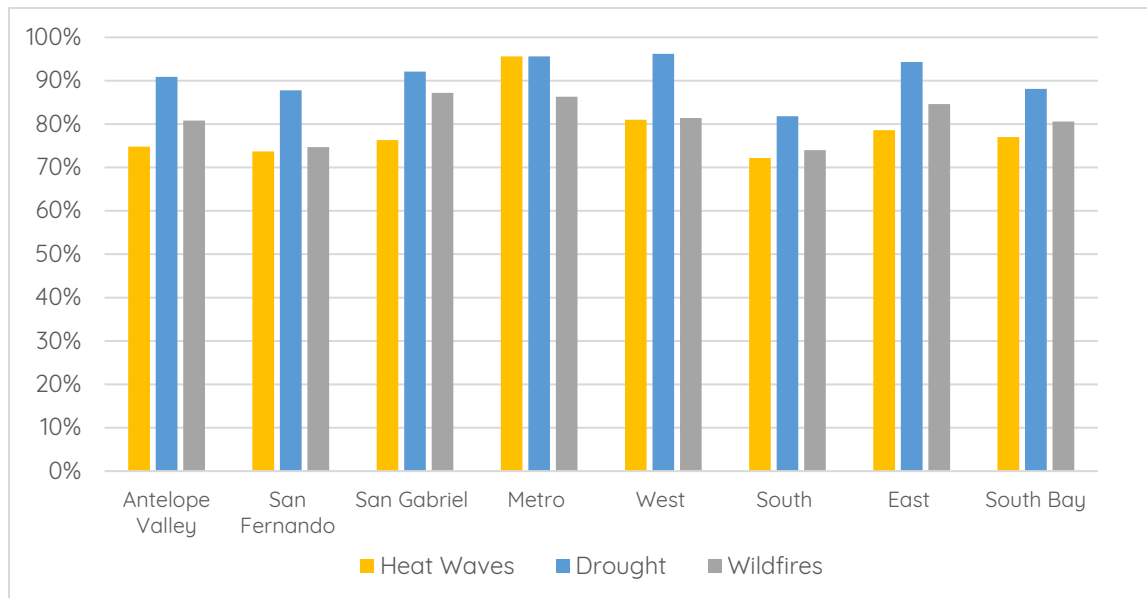


Figure 27: Concern with Climate Change Impacts by Service Planning Area^{lvii}

Draft Goals, Potential Strategies and Indicators

The following are the major goals and some of the potential strategies in support of public health and wellbeing. While there are hundreds of possible strategies, we have focused on those that will benefit most from collaborative planning and implementation across the County. We also intend for each goal to have a focus on equity, so as to reduce disparate outcomes experienced by disadvantaged communities, particularly low-income communities of color, with respect to benefits, resources, and impacts. Additionally, public health and wellbeing goals and strategies must take resilience into consideration, including but not limited to the impacts of a changing climate. Economic benefits and risks are also key concerns. Please note that these goals and strategies are presented as a basis for discussion at the Public Health and Wellbeing workshop; we anticipate that they will be edited (including potentially removing or adding items) as a result of stakeholder input.

Definition of Key Terms

Term	Definition	Example
Organizing Principle	A core value at the heart of the plan - the “why”	Nurturing Healthy Communities
Goals	Broad, aspirational statement of what we want to achieve	Improve transportation-related health and safety outcomes
Strategies	Approach or approaches that we take to achieve a goal	Employ strategies to mitigate the negative health effects of transportation on adjacent neighborhoods
Actions	Specific policy, program, or tool we take to achieve a strategy	Accelerate the electrification of freight vehicles
Indicators	Quantitative and qualitative measures used to assess performance	Air quality (PM 2.5, ground level ozone)
Targets	Levels of performance that are sustainable	50% reduction from baseline year



Draft Goals and Potential Strategies

Goal A. Eliminate racial disparities in health outcomes by supporting policies that advance equity.

Potential Strategies:

- Target public health resources in communities with the highest health disparities and at the greatest risk to the health impacts of climate change
- Partner with neighborhood-based organizations to engage residents around public health, equity, sustainability, and climate change and seek funding for neighborhood-driven project implementation.
- Develop a community-based model for sharing in decision-making on public health and sustainability policies and programs.
- Use an equity-based framework to review and revise existing policies and programs.
- Manage community centers that serve flexible functions, including chronic disease management, prevention services, and resilience hubs.
- Implement the Center for Health Equity's Action Plan.

Goal B. Improve collection, accessibility, and evaluation of public health data by adopting a racial equity lens.

Potential Strategies:

- Systematically collect and disaggregate health data to lift up reveal health inequities across groups.
- Use storytelling and infographics to publish and disseminate health and wellness materials in ways that bring data to life.
- Partner with local and regional agencies and organizations to evaluate social vulnerabilities, including development of urban heat island maps, community mapping of assets, and health outcomes.
- Conduct a detailed vulnerability assessment of disadvantaged communities, including infrastructure risk, health promotion and disease prevention, and specific actions and resiliency policies.
- Develop air quality monitoring networks (prioritized in disadvantaged communities) with publicly available data. Utilize this data to identify hotspots of pollution.
- Continue supporting individual and community air quality monitoring, which is beginning to occur with inexpensive air quality monitors.
- Seek opportunities for partnerships with AB 617 communities, California Air Resources Board, and USEPA.
- Develop pilot projects to evaluate findings about community needs, climate preparedness, and public health strategies at the neighborhood scale.



Goal C. Improve community communication by developing a place-based climate change education partnership.

Potential Strategies:

- Support community engagement campaigns that promote education and outreach programs to prepare residents for sustainability challenges, including health promotion and disease prevention, adaptation strategies, and emergency preparedness.
- Work with community leaders, civic groups, neighborhood associations, and community-based organizations to connect with hard-to-reach populations.
- Co-facilitate an open, ongoing dialogue based on healing and learning to address race and advance healthy equity.
- Cultivate community leadership pipeline to lead educational sessions about preparedness planning, sustainability resources, and training available to protect themselves.
- Dedicate time to building local partnerships and learn from community members methods for increasing understanding, communication, accountability, and trust with local government.

Goal D. Build a County that supports inclusion, health and wellbeing for all residents.

Potential Strategies:

- Implement land use, housing, and transportation patterns that promote access and support compact mixed-use development, housing affordability, and active transportation.
- Ensure future development considers the diversity of users in the community, local health context, and strategies for promoting equitable development.
- Expand park funding and access, striving for an equitable distribution of park space in the County.
- Develop regional partnerships that support healthy food access and improve food security.
- Require healthy building design and construction responsive to the potential impacts of climate change.
- Expand resources for the County's Healthy Design Workgroup

Goal E. Enhance health equity by addressing racial equity and environmental pollution.

Potential Strategies:

- Partner with community-based organizations to develop and prioritize environmental justice programs and policies to protect human health and welfare.
- Work with regional agencies and local partners to strengthen air quality regulations and improve enforcement of existing regulations to protect human health and welfare.
- Implement land use, zoning, and building regulations that minimize the exposure of sensitive populations to stationary and mobile sources of emissions.
- Ensure the community has access to clean and affordable water.

- Properly close idle and improperly abandoned wells and create requirements for capturing emissions from abandoned or idle wells.
- Provide incentives for electrification of in-home natural gas appliances, while being aware of differences in the cost of electricity versus natural gas for the same service.
- Remediate and redevelop brownfield sites.
- Expand pilot programs like the County's GreenZones program and the City of Los Angeles's Clean Up Green Up program.
- Coordinate affordable housing preservation programs with strategies to mitigate and eliminate environmental exposure from air pollution, out-of-date plumbing, and other sources of pollution.

Goal F. Accelerate the transition to sustainable alternatives to fossil fuel for transportation, manufacturing, and energy production.

Potential Strategies:

- Develop and support zero emission vehicle technology.
- Set County-level targets for zero and near-zero emission vehicles, transit, and goods movement.
- Provide low-cost, reliable, and clean mobility alternatives to privately owned vehicles.
- Increase access to electric vehicles in disadvantaged communities through vehicle sharing, incentives, charging infrastructure, and education.
- Incentivize the electrification of goods movement vehicles and equipment, particularly along the 710 corridor, with a priority on assisting independent truckers to finance non-polluting vehicles.
- Upgrade the entire County transportation fleet with zero emission vehicle technology.
- Transition to 100% renewable energy resources.
- Advocate for the continued adoption of clean renewable energy through the Clean Power Alliance, as well as through municipal and private utilities.
- Support the development of clean energy technology businesses, especially those providing sustainable jobs in zero emission vehicle manufacturing, operations, and maintenance.

Goal G. Improve access to educational and employment opportunities.

Potential Strategies:

- Invest in affordable early childhood education programs.
- Collaborate with regional economic development organizations, local governments, and community-based organizations to develop a comprehensive job training and placement program, leveraging sustainability and climate change initiatives.
- Expand youth training and employment programs that connect job seekers with high growth industries.
- Partner with local community development partners to support wealth building strategies, including local entrepreneurship, collaborative development opportunities, local hiring and procurement, and inclusive workforce development pathways.

Potential Indicators

All indicators apply to L.A. County unless otherwise stated.

Public Health	
Overall Health Conditions, Chronic Disease, Behaviors	Life expectancy at birth
	Years of life lost
	Obese adults
	Low birthweight infants
	Adults with depression
	Adults who meet guidelines for physical activity
Community Wellbeing	Adults in good or excellent health
	Average number of unhealthy days
	Poverty
	3 rd Grade Reading Level Proficiency
Health Care	Access to care
	Health professional shortage areas
	Cost of care
Environmental Health + Climate Change	CalEnviroScreen
	Environmental Justice Screening Tool
	Asthma Cases
	Heat Vulnerability Index
	Cooling Centers
	Homeless Housed in Emergency Shelters
	Heat Stress-Related Emergency Department Visits
	Cases of West Nile Virus
	Motor Vehicle Collision Fatalities and Severe Injuries
Built Environment	Food Security
	Healthy Places Index
	Households Enrolled in CalFresh

	Modified Retail Food Index (for CA)
	Perception of Neighborhood Safety
Air Quality	
Ambient Air Quality	Ozone, PM2.5, and PM10 levels
	Overall air toxics risk and diesel risk
Air Pollution Emissions	Large stationary source toxic emissions
	Mass emissions of pollutants from mobile sources
	Cancer risk associated with diesel mobile sources
Emissions Reduction Efforts (Countywide)	Compliance with rules and regulations by SCAQMD permitted facilities
Emissions Reduction Efforts (County Operations)	County adoption of Near-Zero and Zero Emission Vehicles into its fleet
Air Quality, Jobs and Economy	Economic cost of air pollution

Cross-Cutting Themes

Economy and Workforce Development

- Improving access to financial preparedness and wealth-building tools, including access to affordable and stable housing and business development opportunities, is vital to building community health and economic resilience. The deep racial and ethnic differences in wealth across the County demonstrate the extreme financial vulnerability faced by some nonwhite households. U.S. Black and Mexican households have 1 percent of the wealth of whites in Los Angeles—or one cent for every dollar of wealth held by the average white household in the metro area.⁴
- Creating jobs and income creation opportunities that develop skills, promote inclusive hiring, and support high-growth industries, can lead to many benefits. In Los Angeles County, employment in educational services (private), health care, and social assistance are projected to add the most jobs by 2024.⁵
- Targeting planning dollars on programs that protect local jobs and housing for communities with the highest level of vulnerability can protect economic benefits for working-class communities, while supporting anti-displacement housing policies, health, and local jobs programs.
- With the enforcement of air quality and health-related requirements, it is important that manufacturing and industrial facilities are not shut down resulting in many lost jobs but are rather encouraged to use less hazardous materials such as Lead or integrate more sustainable processes into the facilities.
- Improving air quality in L.A. County has the potential to improve the health conditions of outdoor laborers and to reduce the number of sick days of those workers exposed to air quality issues and other pollutants as well as those disadvantaged residents that live in areas with previously high concentrations of harmful pollutants.
- Zero emissions vehicle technologies, a method for improving air quality in the County, require workforce training to prepare workers for new opportunities in the advanced transportation sector.

Housing and Homelessness

- Nearly 60,000 people are homeless in Los Angeles County, a significant spike from 2016. In 2017, Los Angeles County voters approved Measure H to fund services and programs to prevent and combat homelessness in the County. The initiative will fund housing, mental health, substance abuse treatment, social services, and rigorous accountability.
- Los Angeles is among the most rent-burdened cities in the entire nation. More than half of renters spent more than 30% of their household income on rent each month and the availability of affordable rental options is limited across the entire region.⁶ At the County level, lower income renters are significantly

cost burdened and there is a shortage of 544,000 rental homes.⁷The County Board of Supervisors passed initial legislation capping rent increases at 3% while strengthening eviction laws.^{lviii} Cost-burdened households have to make difficult decisions that impact health outcomes, such as the inability of lower-income populations to afford health care services.

- The number of gentrified neighborhoods (census tracts) in Los Angeles County increased by 16% percent between 1990 and 2015.⁸ Gentrification can lead to housing burdens, employment instability, displacement, and negative health outcomes. Displacement and residential instability are linked to negative health and social outcomes.⁹
- In L.A. County new housing developments continue to be built within 1000 feet of freeways despite clear evidence that such distance can cause severe harm to one's health. Recently, a low-cost housing development for seniors was constructed within 500 feet of the 5 freeway. Considering air quality risks and health conditions, residential developments such as these should not be built in such close proximity to freeways and other highly trafficked roadways.
- Vulnerable populations, particularly people experiencing homelessness and those living in poor housing conditions without access to air conditioning, weatherized buildings, or quality transportation to escape oppressive conditions may be at greater risk for health impacts from these events. Increased energy demand during heat events can cause brownouts and blackouts, which creates additional vulnerability.
- Disadvantaged communities are more likely to experience the effects of indoor air pollutants from poor housing quality.

Land Use

- Land use decisions have significant health impacts. The County's Healthy Design Ordinance promotes the principles of Livable Communities, including increased physical activity, conservation of natural resources, multimodal transportation, and public places. Elevating health equity priorities in making land use decisions can help support a healthy, vibrant, and resilient community.
- The cumulative impacts of pollution have been found to be high in specific Los Angeles County neighborhoods. These "toxic hot spots" have high levels of pollution from stationary and mobile sources that elevate health risks. In close proximity to these sources of pollution, these communities have land uses, such as schools, day care facilities, parks, senior housing, and health care facilities that serve populations sensitive to pollution, such as children and seniors.¹⁰
- Neighborhoods can be designed to enhance human and environmental health. In 2016, Los Angeles County voters approved three major ballot measures: Measure A to fund parks and open space, Measure M to increase investments in active transportation and expand public transit, and Measure JJJ to create new affordable housing. There is a monumental opportunity for Los Angeles County opportunity to ensure future land policies support health equity.

Water

- Poor water quality poses serious health risks. Investments in green infrastructure and stormwater retention can increase the number of projects that capture water for reuse and improve water quality and provide recreational opportunities, while reducing the risk of flooding and stormwater pollution. Stormwater and urban runoff across the LA region is highly polluted with a mix of toxic contaminants, many of which are harmful to human health. This runoff enters receiving waters like rivers, lakes, streams, and the ocean, posing a threat to people recreating in these waterbodies.^{lx}
- Access to quality drinking water is critical to public health. All water, regardless of source, contains some contaminants. Residents concerned with the quality of the County's drinking water are turning to bottled water, which has a sizeable carbon footprint. Exploring integrated water management systems provides an opportunity to better manage public resources, incorporate health equity provisions, and support innovative policy and systems change.^{lx}

Waste and Resource Management

- Landfills and waste management facilities in regions tend to be concentrated in relatively lower income communities, which are often made up of minority populations.^{lxi} Continuing to reduce waste and reliance on landfills, and ensuring that waste processing facilities operate with as minimal impacts as possible, can help reduce the disproportionate environmental impacts already borne by disadvantaged communities.^{lxi}

Transportation

- A person's travel behavior has both positive and negative effects on health and wellness. An over-reliance on private cars contributes to higher rates of air pollution and respiratory illness.^{lxii} Streets that are not built for or that do not accommodate pedestrians and cyclists encourage higher vehicle speeds,^{lxiii} which in turn contribute to more severe collisions that cause injuries and fatalities.^{lxiv} Streets that accommodate all modes of travel tend to be safer streets, while also encouraging physical activity and reducing air pollution and greenhouse gas emissions.^{lxv}
- Vision Zero strategies that focus on improvements to a multimodal transportation system can have profound impacts on land use development and health outcomes. Multimodal strategies can support economic growth, community health, and GHG reduction. Long-range planning documents, including the Southern California Association of Government's Regional Transportation Plan and Metro's First Mile Last Mile Strategic Plan, provide important frameworks for integrating health and active living strategies. Shorter term action plans and designs for street redesigns by local government
- Metro is an important partner and leader in activating the County's transportation network and enhancing the use of public transit. Coordinated regional transit projects can ensure allocation of project investments and health benefits to the most vulnerable communities. Role of local governments in road design.
- The consolidation of state and federal funding to support active transportation will generate nearly \$1 billion dollars over the next decade for active transportation projects.^{lxvi} Investments include the creation of safer roads, new trails, and enhanced connectivity to neighborhoods, transit, and parks. Currently, a proposition to repeal the measure is on the ballot for the November 2018 election.
- There is a growing goods movement throughout the County. Regional truck vehicle miles traveled (VMT) are estimated to increase by over 80% by 2035, relative to a 2008 baseline, growing from 6.8% of total VMT in 2008 to 10% by 2035.^{lxvii} This is driven by growth in container shipping and threatens to

worsen congestion on the region's highways and railways, as well as worsening the freight system's impacts on health and quality of life unless there is significant improvement in pollution control strategies.

- Many of the trucks, ships, and locomotives that are used for goods movement are powered by diesel engines which generate pollutants that affect adjacent communities, which are predominantly low-income communities of color.
- Idling can have a severe impact on air quality, releasing harmful nitrogen oxide and carbon dioxide emissions, especially dire in close proximity to populated facilities such as schools, residential areas, and commercial districts.
- In the effort to electrify vehicle fleets, those vehicles that service sensitive land use areas such as residential, schools, and day care facilities should be given priority to more aggressively reduce pollutants and improve air quality.

Energy

- Energy efficiency can have co-benefits for health, including reductions in air pollutants, fossil fuels, and reductions of costs. Reducing energy usage is a good first step to reducing air pollution and an opportunity to align efforts with state and federal clean air regulations.
- Prioritizing investments in expanding renewable energy, storage capacity, and emergency backup systems can contribute to modernizing the power grid. For instance, community solar and energy efficiency programs can contribute to a more resilient power grid during extreme heat events and lessen the risk of future power outages, which have serious health implications for those who depend on medical equipment or air conditioning.
- Regional and state partnerships can help accelerate the shift to renewable energy and energy-efficient solutions, which can ensure a more reliable energy supply and reduce air and climate pollution from fossil-fuel power plants. In September 2018, Governor Brown signed into law a mandate for 60 percent renewable energy by 2030 and 100 percent carbon-free energy by 2045, making California the second state (after Hawaii) in the country to legally commit to 100% clean energy.^{lxviii}
- Oil and gas development in the Los Angeles Basin presents public health and safety concerns because some oil and gas reserves lie beneath densely populated urban areas. While some facilities have been subject to stricter design and mitigation measures, others have not been required to conduct health risk assessments or other environmental studies. In some neighborhoods, such as South Los Angeles, residences are located only several feet away from the boundary of a drilling site and as close as 60 feet
- The transition from natural gas power plants to renewable sources will drastically improve the air quality conditions in LA County, especially in disadvantaged communities that live near such power plants and related facilities as well as reduce the potential for leaks and related toxic emissions, air quality and health issues.

Landscapes and Ecosystems

- Extreme heat events and drought decrease soil moisture and increase plant mortality contributing to wildfires and poorer air quality



- Plentiful vegetation has the potential to significantly improve air quality acting as filters to remove gaseous pollutants. However, poor air quality deteriorates the lifespan and growth potential for vegetation with increasing exposure to sulfur dioxide (SO₂) and ozone (O₃).

Climate Change

- Air quality challenges are exacerbated by climate change, and thus are expected to significantly worsen over the next few decades. Temperatures in L.A. County are expected to continue rising, leading to accelerated ozone production and higher ground-level concentrations potentially offsetting expected emission reduction progress and its positive effect on air quality. It is estimated that ozone could increase to nearly 5 – 10 ppb in L.A. County by the year 2050 while the number of days each year with ozone levels over 90 ppb could increase by 22 – 33 days.^{lxix} Ground-level ozone is associated with various health effects such as reduced lung function, pneumonia, asthma, cardiovascular-related morbidity, and premature death.
- Anticipated changes in meteorological conditions under climate change will affect future air quality such as increased periods of stagnation and pollution buildup. Additionally, as climate change continues, Southern California is expected to receive suffer from more frequent and longer droughts, creating more dust and wildfires, both of which raise levels of airborne particulates leading to hospitalizations for illnesses including asthma, acute bronchitis, chronic obstructive pulmonary disease, and pneumonia.

Local, Regional, State, and National Targets

The following are examples of existing local, regional, state, and national frameworks that establish targets for addressing health, wellbeing, and air quality. While there are hundreds of possible strategies, we have focused on those that will benefit most from collaborative planning and implementation across the County. We also intend for each goal to have a focus on equity to reduce disparate outcomes experienced by disadvantaged communities, particularly low-income communities of color, with respect to benefits, resources, and impacts. Additionally, public health and wellbeing goals and strategies must take resilience into consideration, including but not limited to the impacts of a changing climate. Economic benefits and risks are also key concerns. Please note that these goals and strategies are presented as a basis for discussion at the Public Health & Air Quality workshop; we anticipate that they will be edited (including potentially removing or adding items) as a result of stakeholder input.

These documents are not inclusive of all efforts across the County. Instead, they offer a snapshot of how local, regional, state, and national agencies are integrating targets within broader health equity frameworks.

Local

LA County Department of Public Health Strategic Plan 2018-2023	<p>This Plan establishes a blueprint to promote health equity. Targets include implementing at least three new or modified administrative practices and programmatic activities for each of the following: collaborating with community partners to identify DPH, local, and state policy changes that promotes racial equity by December 31, 2020; and connecting Health Agency patients to services including community resources for chronic disease management, and permanent medical homes, by June 30, 2020.</p>
A Portrait of Los Angeles County	<p>This Report provides an in-depth analysis of inequities across the County. It adopts the American Human Development Index, a measure of wellbeing, to narrate the story of the County's people, places, and critical issues. The analysis concludes with a series of goals and recommendations to boost the County's Human Development Index score and narrow racial and ethnic disparities, including: reducing violence, investments in vulnerable communities, health improvements, and educational equity.</p>

LA County Health Center for Health Equity Action Plan	<p>The Center for Health Equity is an initiative led by DPH, in collaboration with the Departments of Health Services and Mental Health. The Center worked in partnership with local partners to prepare an Equity Action Plan, outlining a set of goals, strategies and objectives for 2018-2023 to reduce and eliminate health inequities across the County. The work is organized around 5 strategic priorities: reduce/eliminate gaps in health outcomes, provide useful and inclusive data, support policy and systems change, cultivate public, private, and community partnerships, and strengthen organizational readiness and capacity.</p>
LA County Community Climate Action Plan	<p>The County developed a Community Climate Action Plan (CCAP) in 2015 that provides a framework for reducing emissions in the unincorporated areas of the County by at least 11% below 2010 levels by 2020. The Plan lays out four significant climate change effects that impacts public health, including: increases in ambient temperatures, increases in extreme heat conditions, increased frequency, intensity, and duration of extreme storms, and changes in growing season and species distribution.</p>
LA County DPH Community Health Improvement Plan	<p>Every five years, DPH leads a community health planning effort to update its Community Health Improvement Plan (CHIP). The CHIP is a collaborative process of identifying health issues and ways to improve community conditions over the long-term. DPH works with local partners to develop goals, objectives, and strategies. To achieve the goals of the CHIP, DPH works with colleagues both within and outside the traditional “health” sector.</p>
2015 LA City and County Plan for a Healthy Los Angeles	<p>Established seven goals surrounding public health issues, including: health equity, city planning, parks and open spaces, food, environmental health, education, and neighborhood safety. Most targets are set to be accomplished either immediately, or within 2-4 years of the Plan adoption. Other jurisdictions across the County have Health and Wellness Elements integrated within their General Plans.</p>
City of Santa Monica Wellbeing Index	<p>A measurement tool for understanding what contributes to wellbeing, and how wellbeing differs by geography and demographic factors. This tool measures six dimensions of wellbeing: outlook, community, place & planet, learning, health, and economic opportunity.</p>
City of El Monte Health and Wellness Initiative	<p>Promotes healthy lifestyles and physical activity, access to healthy food, public safety and security, and access to recreation. This Plan established a walking club that had over 350 residents actively enrolled, and created a 1-mile circuit-walking path with mileage markers and signage connecting various civic, education, retail, and health care facilities.</p>

Los Angeles Food Policy Council – Good Food Purchasing Program	LA County’s Dept. of Public Health helped develop a food procurement model that helps organizations and governments purchase food that is healthy, sustainable, local, humane, and fair. Organizations that pledge to use this model must meet 25 targets centered around sustainable procurement techniques and healthy food preparation practices. The City of Los Angeles and the LA Unified School District were among the first entities to pledge to the GFPP.
County of Los Angeles - Vision Zero	End all traffic deaths and serious injuries by implementing policies, programs, and built environment interventions.
City of Los Angeles - Vision Zero	End all traffic deaths and serious injuries by 2025 by implementing policies, programs, and built environment interventions.

Regional

2016 Southern California Council of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy	To improve public health, in 2016 SCAG established that it would protect the environment health of residents by improving air quality and encourage active transportation (e.g., bicycling and walking). This includes increasing bike trips by 71% and walk trips by 28% region wide compared to bike and walk trips taken in 2012.
SCAQMD Air Quality Management Plan	Aims to promote new regulatory measures to implement an expected 30% reduction of NOx from stationary sources in the 15-year period between 2008 and 2023
SCAQMD Voluntary Incentives	SCAQMD will incentivize stationary and mobile source projects that will result in emission reductions of NOx, voluntary organic compounds, and particulate matter. The incentives would be issued for emission mitigation, reduced toxics exposure, and new technology development and deployment that assist with deployment of advanced clean technology and reduce air quality impacts in environmental justice areas.
Electric Bus Pledges	According to the Los Angeles County Electric Bus Coalition, formed by a group of non-profits, Several county transit agencies—including LA Metro, LADOT, Antelope Valley Transit, and Santa Monica’s Big Blue Bus, have pledged to work towards 100% electric fleets.

L.A. County Board of Supervisors	The Los Angeles County Board of Supervisors has prioritized prevention of environmental health impacts throughout the County, with initiatives such as the Oil and Gas Strike Team and the Toxic Threat Strike Team. The first addresses the conditions, regulatory compliance, and potential public health and safety risks associated with existing oil and gas facilities in the unincorporated Los Angeles County. The second monitors and coordinates inspections around environmental toxic sites around the county
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State

Portrait of Promise: The California Statewide Plan to Promote Health and Mental Health Equity	Lists many aspirational goals to be completed statewide by either 2018 or 2020. Goals incorporate health and mental health equity into practices across multiple types of health partners, public services, and disadvantaged communities.
Health in All Policies	Health in All Policies (HiAP) is a collaborative approach to incorporating health, equity, and sustainability consideration into policymaking across sectors to improve the health of all people. The approach is based on addressing the social determinants of health as key drivers of health outcomes and health inequities. The California Department of Health, in partnerships with the Public Health Institute and the Strategic Growth Council, staff the California Health in All Policies Task Force.
2017 General Plan Guidelines (Environmental Justice Element)	The State of California requires all cities and counties to develop local general plans. These plans must focus on multiple public health-focused elements, including environmental justice, safety, air quality, housing, and open space.
Let's Get Healthy California	This program sets multiple targets for a wide range of public health indicators, including adult and childhood obesity, mental health problems, and chronic disease, to be met by 2022. For example, the program aims to ensure that at least 88% of California adults have consistent access to fresh fruits and vegetables in their neighborhood. Also sets target of decreasing the percentage of 7th graders who have constant feelings of sadness or hopelessness by 28%. Finally sets the goal of decreasing the number of adults with diabetes to 7%.
CARB Mobile Source Strategy	Envisions a broad strategy for reducing emissions from mobile sources integrating cleaner vehicle technologies, energy sources, and fuels. Estimated benefits include an 80% reduction in smog-forming emissions and a 45% reduction in diesel particulate matter in the South Coast.

AB 617 (Garcia, 2017)	AB 617 provides funds to address the disproportionate impacts of air pollution in environmental justice communities. The measure requires local air districts, like SCAQMD to take specific actions to reduce air pollution and toxic air contaminants from commercial and industrial sources. In 2017, SCAQMD received \$10.7 million for community-level emissions reductions plans along with monitoring and testing. The bill also includes new requirements for enhanced fence-line and community monitoring in the vicinity of major stationary sources such as refineries.
Community Air Protection Program (CARB)	Under AB 617, this program works to implement community air monitoring and community emissions reduction programs, and to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process.
AB 134 (Committee on Budget, 2017)	AB 134 funds community air quality projects, specifically clean vehicle and ports investments.

National

2017-2022 Health Care Preparedness and Response Capabilities	The Office of the Assistant Secretary for Preparedness and Response published a guideline for local governments to implement in their public health planning processes. These are listed as four capabilities, including: foundation for healthcare and medical readiness, health care and medical response coordination, continuity of health care service delivery, and medical surge.
Healthy People 2020	This plan establishes 26 indicators organized under 12 overarching public health topics, to be achieved by 2020. Topics include access to health services; clinical preventive services; environmental quality; injury and violence; maternal, infant, and child health; mental health; nutrition, physical activity, and obesity; oral health; reproductive and sexual health; social determinants (high school graduation rates); substance abuse; and tobacco use.

<p>National Ambient Air Quality Standards (NAAQS)</p>	<p>Under the Clean Air Act, the NAAQS apply to several key air pollutants which are regulated at the state level by AQMD. Much of Southern California is in non-attainment (meaning areas consistently fail to meet standards) for several NAAQS, including frequently for ozone and fine particulate matter. For the South Coast Air Basin, it is estimated that oxides of nitrogen, one of the key ingredients in ozone and fine particulate formation, must be reduced by around 80 percent from 2010 levels by 2023, and almost 90 percent by 2032 to meet federal standards.</p>
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